ICONES PLEUROTHALLIDINARUM

II

SYSTEMATICS OF MASDEVALLIA (ORCHIDACEAE)

Missouri Botanical Garden

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ERRATA

Page 32. delete *M. cinnamomea* Rchb.f.
M. figueroae should read *M. figueroae* Luer

Page 57. delete 32 after *cinnamomea*

Page 61. *heteropetala* should read *heterotepala*
xiphium Rchb.f. ex Rchb.f. should read *xiphium* Rchb.f. ex Krzl.

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SYSTEMATICS OF MASDEVALLIA

CARLYLE A. LUER

Missouri Botanical Garden

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Masdevallia laevis Lindl.
Intendencia del Putumayo, Colombia, alt. 2900 meters above sea level, 19 Jan. 1979.

SYSTEMATICS OF THE GENUS **MASDEVALLIA** (ORCHIDACEAE)

Carlyle A. Luer

ABSTRACT

The genus *Masdevallia* is described. A key to the subgenera and sections in regard to relationships, and a key to the subgenera, sections and subsections without regard to relationships are given. The infrageneric taxa are reviewed and briefly described, and the species of each are listed. A representative black and white illustration of each supraspecific taxon is included.

New taxa and combinations:
Masdevallia subgen. **Amanda** Luer, nom. nov.
subgen. **Amanda** sect. **Nidificae** Luer, sect. nov.
subgen. **Amanda** sect. **Ophioglossae** Luer, sect. nov.
subgen. **Amanda** sect. **Pygmaeae** Luer, sect. nov.
subgen. **Masdevallia** sect. **Amaluzae** Luer, sect. nov.
subgen. **Masdevallia** sect. **Aphanes** Luer, sect. nov.
subgen. **Masdevallia** sect. **Caudivolvulae** Luer, sect. nov.
subgen. **Masdevallia** sect. **Coriaceae** subsect. **Durae** Luer, subsect. nov.
subgen. **Masdevallia** sect. **Ligiae** Luer, sect. nov.
subgen. **Masdevallia** sect. **Masdevallia** subsect. **Oscillantes** Luer, subsect. nov.
subgen. **Masdevallia** sect. **Masdevallia** subsect. **Saltatrices** (Rchb. f.) Luer, stat. nov.
subgen. **Masdevallia** sect. **Masdevallia** subsect. **Tubulosae** (Rchb. f.) Luer, stat. nov.
subgen. **Masdevallia** sect. **Mentosae** Luer, sect. nov.
subgen. **Masdevallia** sect. **Polyanthae** subsect. **Alaticaules** (Krzl.) Luer, stat. nov.
subgen. **Masdevallia** sect. **Reichenbachianae** subsect. **Dentatae** Luer, subsect. nov.
subgen. **Masdevallia** sect. **Reichenbachianae** subsect. **Reichenbachianae** (Woolw.) Luer, stat. nov.
subgen. **Meleagris** Luer, nom. nov.
subgen. **Pelecaniceps** Luer, nom. nov.
subgen. **Teagueia** Luer, subgen. nov.
Masdevallia coriacea Lindl. subsp. **bonplandii** (Rchb. f.) Luer, stat. nov.
Masdevallia picturata Rchb. f. subsp. **minor** (Cogn.) Luer, stat. nov.
Masdevallia ophioglossa Rchb. f. subsp. **grossa** (Luer) Luer, stat. nov.
Masdevallia tubulosa Lindl. subsp. **syringodes** (Luer & Andreetta) Luer, stat. nov.
Masdevallia ventricularia Rchb. f. subsp. **filaria** (Luer & Escobar) Luer, stat. nov.

In Dressler's classification of the Orchidaceae (Dressler 1981) the Pleurothallidinae are one of ten subtribes in the tribe Epidendreae, and the Epidendreae are one of nine tribes in the subfamily Epidendroideae. The Pleurothallidinae, the largest in number of species of the subtribes with nearly 4000 species in 29 genera, are distinguished from the other subtribes by their single-leaved, non-pseudobulbous stems (ramicauls), and an articulated ovary (deciduous from the pedicel).

The genus *Masdevallia* comprises about 350 species distributed from southern Mexico to southern Brazil, and it is the most popular of the pleurothallid genera among hobbyists. The flowers of many species are large and showy, and the plants are relatively easy to cultivate in cool climes. The genus is one of the largest in numbers in the subtribe, being surpassed by *Lepanthes* Sw., *Pleurothallis* R. Br., and *Stelis* Sw. Since the last treatment of the genus (Kränzlin 1925), the number of known species has been doubled. Species of the genus *Masdevallia* are distinguished from all others by the calliferous petals (rarely membranous without a callus), and a lip hinged to a free, incurved extension from the apex of the column-foot.

The first species of the genus, as well as the genus itself, was described by Ruíz and Pavón from plants they collected above Huassa-Huassi in Peru about 1779. The second species of *Masdevallia* to be recorded was discovered by Humboldt and Bonpland in 1801 near the Rumichaca bridge between Colombia and Ecuador. It was published as the *M. uniflora* of Ruíz and Pavón later recognized by Reichenbach as *M. bonplandii*. By 1849, when Reichenbach described his first species in the genus, 24 species already had been described. By the time of his death in 1889, he had attributed about 150 epithets to the genus, but many have been transferred to other genera (i.e. *Dracula* Luer, *Dryadella* Luer, *Porroglossum* Schltr., *Scaphosepalum* Pfitz. and *Trisetella* Luer).

The earliest attempt to indicate subdivisions of the genus was made in 1861 by Reichenbach when he listed groups under the names of species with which they seemed to be most closely allied. In 1874, he began to add an epithet after the binomial and before the Latin description when he described new species. Usually he made no mention of the rank of the subdivision, but in a few instances he indicated "section." In this paper these "sections" are considered validly published.

Pfitzer (1888), Veitch (1889) and Woolward (1890-1896) utilized them as sections or subsections. Kränzlin changed some names and added a few more subdivisions in his error-ridden monograph of the genus in 1925, which is as confusing as it is misleading. In some of his sectional keys he made undesignated subdivisions, usually consisting of unrelated species. These dubious infrasectional categories will not be considered in the following keys and text.

Although vegetatively a few species may be easily recognized (e.g. the pendent *M. caesia* Roezl), it is not practical to try to identify the infrageneric divisions by vegetative characters. All species of *Masdevallia* are characterized by a ramicaul (the aerial, leaf-bearing stem, commonly called the secondary stem) (Stern & Pridgeon 1984) shorter than the coriacious, elliptical to narrowly elliptical, petiolate to subpetiolate leaf.

The inflorescence emerges laterally with an annulus usually near or at the base of the ramicaul, or occasionally higher from near the middle, but always a considerable distance below the leaf-stem abscission layer. The annulus is a visible ring encircling the ramicaul at the level of emergence of the inflorescence. Its origin, analogy, and function, if any, are unknown. The inflorescence may be single- or many-flowered, with the flowers produced simultaneously or successively. The peduncle of some clones of some species (e.g. *M. floribunda* Lindl.) characterized by

a solitary flower, may later bear a second flower. Other obviously closely related species may differ in being single- or successively several-flowered (e.g. *M. rolfeana* Krzl. and *M. calura* Rchb.f. respectively). One large group of interrelated species is characterized by a peduncle triangular in cross-section, but some clones of a few species occasionally produce terete peduncles, or both round and triangular peduncles (e.g. *M. infracta* Lindl. and *M. cuprea* Lindl.).

The character of the pedicel is of value only at the specific level. The subtending floral bract is commonly inflated in subgen. *Amanda*, and a large, cucullate floral bract is seen in sect. *Cucullatae*. The ovaries of all species are trivalved and each valve is ribbed to some degree. The ribs may be externally invisible, or thickened, carinate, or convoluted. The ovary of subgen. *Amanda* is typically carinate-crested. The surface of other ovaries may be smooth, pitted, verrucose, papillose, or spiculate.

The sepals display not only the most obvious but also the greatest diversities in size, shape, texture, and color of all the floral or vegetative parts. They are almost always the most important factor in specific diagnoses, but because of superficial similarities in some of the infrageneric taxa, they are of less value above the specific rank. Although usually partially connate into a cup or tube, they may be essentially free. The surfaces may be glabrous, pubescent, or verrucose. The apices are usually contracted into tails, but they may be tailless.

The calliferous petals, long considered the hallmark of the genus, are small, usually about the length of the column they flank. They are often cartilaginous in consistency with callous thickenings along one or both margins. The labellar marginal callus commonly produces an angle, or a "tooth," near or below the middle, or at the base. Occasionally in very small-flowered species there is no callus. The apex of the petal may be acute, obtuse, or tridentate. It is commonly lobulated in varying degrees and proportions within a species.

The lip is also small, although it often exceeds the stout column in length. It is usually ligulate, often with a callus at the apex, and the apex may be smooth or verrucose. Diagonal marginal folds near the middle often divide the lip into a hypochile and an epichile. A simple, smooth lip is seen in sect. *Masdevallia*, and a divided lip usually with a verrucose epichile is seen in sect. *Polyanthae*. In sect. *Coriaceae* the lip is simple but thick and verrucose.

The column is very much the same in all species of *Masdevallia*. It is semiterete with a ventral anther more or less hooded by the apex of the column. The two ovoid pollinia are connected to a viscidium by granular, elastic caudicles. The base of the column is prolonged into a thickened foot at the apex of the ovary, and from the apex of the foot there is a free, incurved extension to which the lip is hinged.

In the present classification of the genus *Masdevallia*, five subgenera, 17 sections and 12 subsections are recognized. The majority of the species constitute subgen. *Masdevallia*. In the second of the two following keys to the subgeneric taxa, an attempt has been made to bring related species together irrespective of superficial similarities or dissimilarities. No attempt has been made in the first key to indicate relationships.

KEY TO THE SUBGENERA, SECTIONS AND SUBSECTIONS OF *MASDEVALLIA*
(without regard to relationships)

[*A.* = subgen. *Amanda*; *M.* = subgen. *Masdevallia*]

1 Plant caespitose or ascending 2
1′ Plant long-repent ..... *M.* sect. *Racemosae*

2 Inflorescence 1-flowered 3
2′ Inflorescence 2- to many-flowered 21

(single-flowered)

3 Inflorescence from near the middle of the ramicaul 4
3′ Inflorescence from low on the ramicaul 6

4 Sepals tailless ..... subgen. *Pelecaniceps*
4′ Sepals with tails 5

5 Floral bract cucullate, enclosing the ovary and the base of the sepals ..... *M.* sect. *Cucullatae*
5′ Floral bract not enclosing the ovary and the base of the sepals ..... *M.* sect. *Masdevallia* subsect. *Masdevallia*

6 Ovary winged, often undulate-winged 7
6′ Ovary not winged 10

7 Sepals free except at the base ..... *A.* sect. *Fissae*
7′ Sepals variously connate 8

8 Ovary spiculate or carinate-crested ..... *A.* sect. *Pygmaeae*
8′ Ovary not spiculate nor carinate-crested 9

9 Column-foot much longer than the column ..... *A.* sect. *Nidificae*
9′ Column-foot not longer than the column ..... *A.* sect. *Ophioglossae*

10 Sepaline tails normally twisted ..... *M.* sect. *Caudivolvulae*
10′ Sepaline tails not normally twisted 11

11 Lip divided by marginal folds into an epichile and a hypochile ..... *M.* sect. *Ligiae*
11′ Lip not divided into an epichile and a hypochile 12

12 Petals callous, with a tooth 13
12′ Petals callous or ecallous, without a tooth 19

13 Petals with a small, acute tooth from a callus above the margin between the middle and lower thirds ..... *M.* sect. *Minutae*
13′ Petals with a tooth or an angle at or above the base, if between the middle and lower third, then arising from a marginal callus 14

14 Lip pandurate and convex below the middle, thinly hinged beneath from the concavity and oscillating ..... *M.* sect. *Masdevallia* subsect. *Oscillantes*
14′ Lip not pandurate and convex below the middle, not thinly hinged and oscillating 15

15 Sepals widespread, connate up to the middle into a shallow, gaping cup with exposed petals and lip ... *M.* sect. *Masdevallia* subsect. *Caudatae*
15′ Sepals connate into a sepaline cup or tube, only the free portions spreading, the petals and lip contained within the cup or tube 16

16 Sepals connate into a deep tube, ventricose and constricted above the middle ..... *M.* sect. *Masdevallia* subsect. *Saltatrices*
16′ Sepals variously connate, but not into a deep, ventricose, constricted tube 17

17 Free portions of the lateral sepals widely expanded, considerably longer and broader than the free portion of the dorsal sepal ..... *M.* sect. *Masdevallia* subsect. *Coccineae*
17′ Free portions of the lateral sepals more or less similar 18

18 Flowers small to large, usually colorful; sepals variously connate; petals usually with a well-developed tooth ..... *M.* sect. *Masdevallia* subsect. *Masdevallia*
18′ Flowers small to medium in size, white, green or yellow; sepals connate into a cylindrical tube; petals with or without a well-developed tooth ..... *M.* sect. *Masdevallia* subsect. *Tubulosae*

19 Lip thick, more or less verrucose ..... *M.* sect. *Coriaceae* subsect. *Coriaceae*
19′ Lip not verrucose 20

20 Petals callous or membranous, sometimes with an ill-defined tooth ..... *M.* sect. *Masdevallia* subsect. *Tubulosae*
20′ Petals cartilaginous, without a tooth ..... *M.* sect. *Reichenbachianae* subsect. *Reichenbachianae*

(two- to many-flowered)

21 Peduncle triquetrous 22
21′ Peduncle round in cross-section 23

22 Lip divided by marginal folds into an epichile and a hypochile ..... *M.* sect. *Polyanthae* subsect. *Alaticaules*
22′ Lip entire ..... *M.* sect. *Mentosae*

23 Inflorescence from near the middle of the ramicaul ..... subgen. *Teagueia*
23′ Inflorescence from low on the ramicaul 24

24 Raceme simultaneously flowered ..... *A.* sect. *Amanda*
24′ Raceme successively flowered 25

25 Sepals free except at the base ..... subgen. *Meleagris*
25′ Sepals variously connate 26

26 Lip divided by marginal folds into an epichile and a hypochile ..... *M.* sect. *Polyanthae* subsect. *Polyanthae*
26′ Lip entire 27

27 Mature plant small, usually less than 8 cm tall, with slender horizontal to descending peduncles 28
27′ Mature plant medium in size, usually more than 8 cm tall, with erect peduncles, stout if horizontal or ascending 29

28 Sepals tailless ..... *M.* sect. *Aphanes*
28′ Sepals with tails ..... *M.* sect. *Amaluzae*

29 Callus of the petals with a tooth 30
29′ Callus of the petals without a tooth 31

30 Callus with a well-developed tooth at the base of the petal ..... *M.* sect. *Reichenbachianae* subsect. *Dentatae*
30′ Callus with a small, acute tooth or angle between the middle and lower third of the petal ..... *M.* sect. *Minutae*

31 Lip verrucose ..... *M.* sect. *Coriaceae* subsect. *Durae*
31′ Lip not verrucose ..... *M.* sect. *Reichenbachianaea* subsect. *Reichenbachianae*

KEY TO THE SUBGENERA AND SECTIONS OF *MASDEVALLIA*
(with regard to relationships)

1 Inflorescence 1-flowered; sepals tailless, rugose within, the dorsal sepal connate to the synsepal to form a short tube; petals longitudinally callous externally; lip with a small pair of erect, uncinate, marginal lobes near the middle ..... subgen. *Pelecaniceps*
1′ Not the above combination 2

2 Inflorescence successively flowered, congested; sepals connate into a short tube; lip divided into a hypochile with a pair of flat laminae below the deflexed epichile; base of the lip very thick, hinged to the under surface of a very thick, cuneate column-foot ..... subgen. *Teagueia*
2′ Not the above combination 3

3 Inflorescence successively flowered, congested; sepals free except at the base; lip hinged to the lower margin of the apex of the column-foot ..... subgen. *Meleagris*
3′ Not the above combination 4

4 Inflorescence 1-flowered to simultaneously 2- to many-flowered; ovary carinate-crested, fringed or spiculate; petals more or less thin, denticulate or serrate, callous on the lower half with or without a tooth; lip usually divided by marginal folds into an epichile and a hypochile ..... (subgen. *Amanda*) 5
4′ Inflorescence 1- to many-flowered; ovary smooth, rarely verrucose, not carinate-crested; petals more or less fleshy-callose with or without a tooth; lip entire or divided into a hypochile and an epichile ..... (subgen. *Masdevallia*) 9

Key to the Sections of Subgen. **Amanda**

5 Inflorescence 2- to simultaneously many-flowered (occasional depauperate specimens are 1-flowered) ..... *Amanda* sect. *Amandae*
5′ Inflorescence 1-flowered 6

6 Sepals free nearly to the base ..... *Amanda* sect. *Fissae*
6′ Sepals connate into an inflated cup, or a tube inflated at the base 7

7 Ovary spiculate or carinate-crested ..... *Amanda* sect. *Pygmaea*
7′ Ovary not spiculate nor carinate-crested 8

8 Sepals connate into an inflated cup or tube, the column-foot longer than the column ..... *Amanda* sect. *Nidificae*
8′ Sepals connate into a cylindrical tube inflated at the base, the column-foot not longer than the column ..... *Amanda* sect. *Ophioglossae*

Key to the Sections of Subgen. **Masdevallia**

9 Rhizome elongated; inflorescence racemose usually with 2 or 3 simultaneous, distant flowers; sepals tailless, connate into the tube ..... *Masdevallia* sect. *Racemosae*
9′ Rhizome not elongated; inflorescence not distantly racemose; sepals variable 10

10 Lip entire, without marginal folds 11
10′ Lip divided by marginal folds into an epichile and a hypochile 17

11 Inflorescence 1-flowered, sometimes followed by a second flower, or 2-flowered; petals with a small, acute tooth from a callus above the margin between the middle and lower thirds ..... *Masdevallia* sect. *Minutae*
11′ Inflorescence 1- to many-flowered; petals without a tooth, or if with a tooth, not a small, acute tooth from a callus above the margin between the middle and lower thirds 12

12 Inflorescence 1-flowered; petals with a tooth or an angle at or above the base, if between the middle and lower thirds, then arising from a marginal callus ..... *Masdevallia* sect. *Masdevallia*
12′ Inflorescence 1- to successively flowered; petal without a tooth if 1-flowered 13

13 Peduncle triquetrous ..... *Masdevallia* sect. *Mentosae*
13′ Peduncle round in cross-section 14

14 Sepals with broad, triangular apices, ecaudate ..... *Masdevallia* sect. *Aphanes*
14′ Sepals with tails 15

15 Lip thick with the apex usually verrucose ..... *Masdevallia* sect. *Coriaceae*
15′ Lip with the apex not verrucose 16

16 Peduncle thin, more or less horizontal or ascending; petals variously angled or toothed in the lower third, if with a tooth, the tooth not descending ..... *Masdevallia* sect. *Amaluzae*
16′ Peduncle stout, erect or horizontal; petals without a tooth, or with 1 or 2 descending teeth ..... *Masdevallia* sect. *Reichenbachianae*

17 Inflorescence successively or simultaneously flowered; peduncle round or triangular in cross-section ..... *M.* sect. *Polyanthae*
17′ Inflorescence 1-flowered; peduncle round in cross-section 18

18 Floral bract inflated, enclosing the ovary; petals more or less callous at the apex ..... *Masdevallia* sect. *Cucullatae*
18′ Floral bract not enclosing the ovary; petals callous along the margin 19

19 Inflorescence 1-flowered; sepaline tails slender ..... *Masdevallia* sect. *Ligiae*
19′ Inflorescence successively flowered; sepaline tails normally twisted ..... *Masdevallia* sect. *Caudivolvulae*

LIST OF ILLUSTRATIONS

Subgenus **Amanda**		
Section **Amandae**	*Masdevallia amanda* Rchb. f.	Plate 1.
Section **Fissae**	*Masdevallia picturata* Rchb. f.	Plate 2.
Section **Nidificae**	*Masdevallia nidifica* Rchb. f.	Plate 3.
Section **Ophioglossae**	*Masdevallia ophioglossa* Rchb. f.	Plate 4.
Section **Pygmaeae**	*Masdevallia erinacea* Rchb. f.	Plate 5.
Subgenus **Masdevallia**		
Section **Amaluzae**	*Masdevallia patula* Luer & Malo	Plate 6.
Section **Aphanes**	*Masdevallia aphanes* Kgr.	Plate 7.
Section **Caudivolvulae**	*Masdevallia caudivolvula* Krzl.	Plate 8.
Section **Coriaceae**		
Subsection **Coriaceae**	*Masdevallia coriacea* Lindl.	Plate 9.
Subsection **Durae**	*Masdevallia dura* Luer	Plate 10.
Section **Cucullatae**	*Masdevallia cucullata* Rchb. f.	Plate 11.
Section **Ligiae**	*Masdevallia ligiae* Luer & Escobar	Plate 12.
Section **Masdevallia**		
Subsection **Caudatae**	*Masdevallia caudata* Lindl.	Plate 13.
Subsection **Coccineae**	*Masdevallia coccinea* Lind. ex Lindl.	Plate 14.
Subsection **Masdevallia**	*Masdevallia uniflora* Ruiz & Pav.	Plate 15.
Subsection **Oscillantes**	*Masdevallia wageneriana* Lind. ex Lindl.	Plate 16.
Subsection **Saltatrices**	*Masdevallia urosalpinx* Luer	Plate 17.
Subsection **Tubulosae**	*Masdevallia tubulosa* Lindl.	Plate 18.
Section **Mentosae**	*Masdevallia mentosa* Luer	Plate 19.
Section **Minutae**	*Masdevallia minuta* Lindl.	Plate 20.
Section **Polyanthae**		
Subsection **Alaticaules**	*Masdevallia bicolor* Poepp. & Endl.	Plate 21.
Subsection **Polyanthae**	*Masdevallia schlimii* Lindl.	Plate 22.
Section **Racemosae**	*Masdevallia racemosa* Lindl.	Plate 23.
Section **Reichenbachianae**		
Subsection **Dentatae**	*Masdevallia macrogenia* (Arango) Luer & Escobar	Plate 24.
Subsection **Reichenbachianae**	*Masdevallia schroederiana* Veitch	Plate 25.
Subgen. **Meleagris**	*Masdevallia meleagris* Lindl.	Plate 26.
Subgen. **Pelecaniceps**	*Masdevallia pelecaniceps* Luer	Plate 27.
Subgen. **Teagueia**	*Masdevallia teaguei* Luer	Plate 28.

TAXONOMY OF THE GENUS *MASDEVALLIA*

Masdevallia Ruíz & Pav., Fl. Peruv. Chil. Prodr. 122, 1794.

Type: *Masdevallia uniflora* Ruíz & Pav., Syst. Veg. 238, 1798.
Ety.: Named in honor of José Masdevall, physician in the court of Charles III of Spain.

Plants perennial, very small to large, weak to robust, epiphytic, lithophytic to terrestrial, the rhizome very short to elongate between aerial stems (ramicauls); roots few to many, slender to coarse or fleshy. Ramicauls ascending to erect, rarely descending, slender to stout, non-pseudobulbous, shorter than the leaf, unifoliate, partially or completely enclosed by 2 or 3 thin, imbricating sheaths near the base, the inflorescence emerging laterally with an annular ring (annulus) from near the base or a considerable distance below the apex (the leaf-stem abscission layer); leaf erect in relation to the ramicaul, thinly to thickly coriaceous, smooth, green or dark green, rarely purplish, elliptical to narrowly elliptical or obovate to narrowly obovate, the apex acute, obtuse to rounded, shallowly notched with a mucro in the sinus, the base rounded, cuneate or narrowly cuneate, with or without a channeled petiole. Inflorescence a solitary flower, a succession of solitary flowers, or a successively or simultaneously few- to many-flowered raceme, longer or shorter than the leaf, the peduncle slender to stout, short or long, round to triangular in cross-section, with 1 to 3 bracts, basal when triquetrous, from an annulus low on the ramicaul; floral bract thin and tubular to coarse and cucullate; pedicel slender to stout, longer or shorter than the floral bract; ovary smooth, verrucose to papillose, or pitted, trivalvate with the ribs smooth, carinate to crested; sepals conspicuous, membranous to thickly fleshy, variously colored, smooth to verrucose or pubescent, broad or narrow, acute to obtuse, nearly free to deeply connate, usually with the apices contracted into elongated segments (tails); petals inconspicuous, thin to cartilaginous, usually longitudinally callous, often produced into a tooth on the labellar half or margin, at or above the base; lip usually inconspicuous, thin to thick, ligulate to pandurate, the apex acute, obtuse to rounded, smooth to verrucose, with or without a callus, entire or denticulate, the disc smooth or with a pair of longitudinal calli, the margins often with oblique folds that create an epichile and a hypochile, the base truncate to cordate, hinged on the end or beneath; column semiterete, the anther ventral, more or less hooded, the apical margins entire to lightly toothed, the rostellum retrorse, the pollinia 2, yellow, pyriform, with elastic, more or less granular caudicles, the stigma ventral, the base of the column developed into a column-foot with the apex of the ovary, often elongated beyond the ovary, with an incurved extension to which the lip is attached.

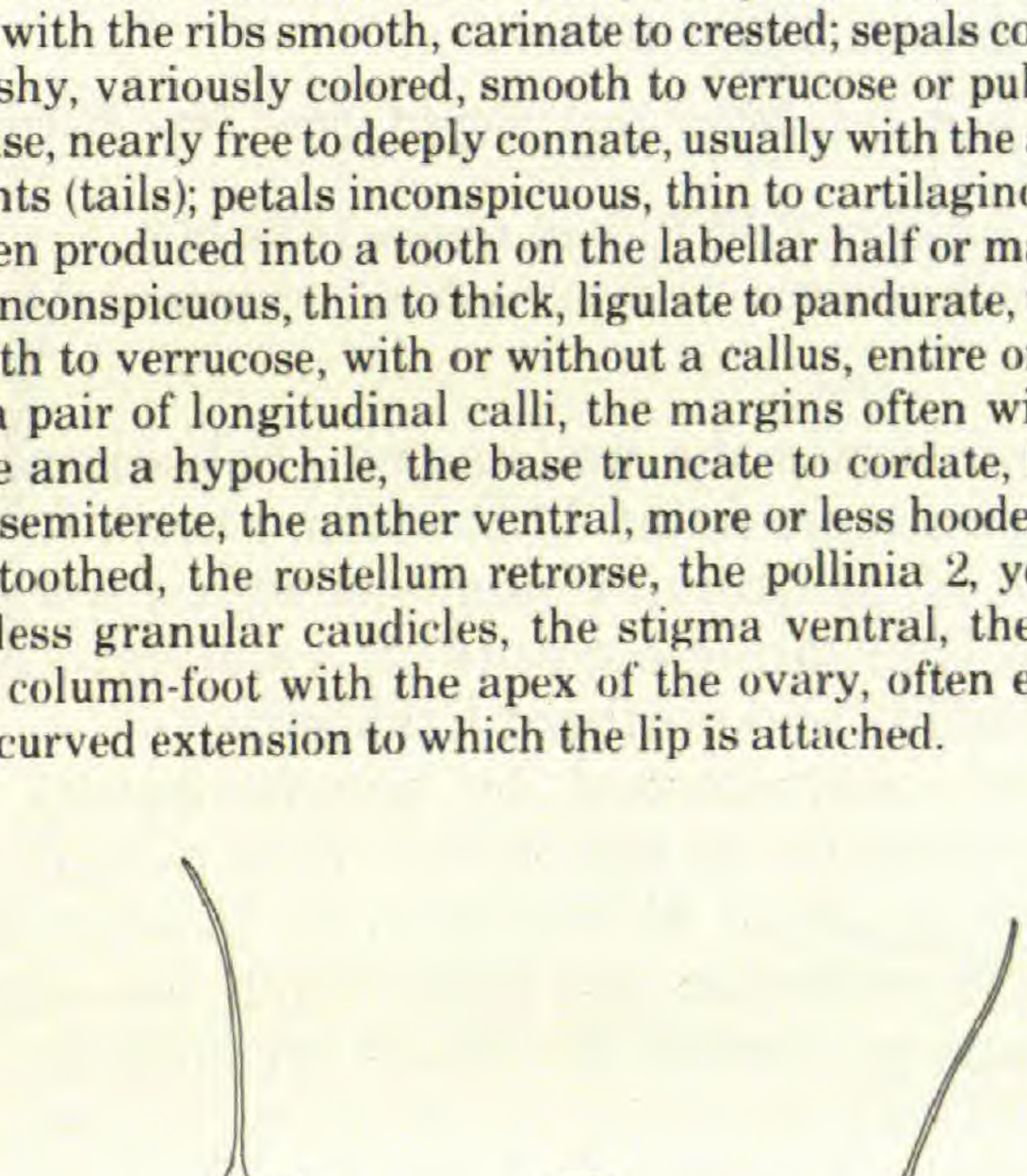

Figure 1. *Masdevallia decumana* Kgr.

Masdevallia subgen. **Amanda** Luer, nom. nov.

Bas.: *Masdevallia* sect. *Amandae* Rchb.f., Gard. Chron. 2:290, 1874.
Type: *Masdevallia amanda* Rchb.f. & Warsc., Bonplandia 2:115, 1854.
Ety.: From the Latin *amandus*, "lovely," referring to the pretty flowers.

The species of this subgenus are distinguished by the single-flowered or simultaneously two- to many-flowered inflorescence; the peduncle round in cross-section; the ovaries carinate or crested; the sepals more or less membranous; the petals relatively thin, often denticulate or serrate; and a lip more or less divided by marginal folds into a hypochile and an epichile. The column is typical for *Masdevallia*. Five sections are recognized.

Masdevallia subgen. **Amanda** sect. **Amandae** Rchb.f. Gard. Chron. 2:290, 1874.
Type: *Masdevallia amanda* Rchb.f. & Warsc., Bonplandia 2:115, 1854.

Syn.: *Masdevallia* subsect. *Amandae* (Rchb.f.) Veitch, Man. Orchid. Pl. 5:18, 1889.
Type: *Masdevallia amanda* Rchb. f. & Warsc.

Syn.: *Masdevallia* sect. *Polystictae* Krzl., Repert. Spec. Nov. Regni Veg. Beih. 34:32, 1925.
Type: *Masdevallia polysticta* Rchb.f., Gard. Chron. 1:338, 1874.
Ety.: From the Greek *polystictos*, "with many dots," referring to the spotted flowers.

This section constitutes the well-known "Polystictae" of Kränzlin. The 28 or more species are found in Ecuador (except for *M. rafaeliana* in Costa Rica and *M. alvaroi* in Colombia), with a few extending into neighboring Peru. One variable species (*M. amanda*) occurs in all three cordilleras of Colombia and northern Ecuador.

The species are characterized by simultaneously multiflowered racemes, but occasionally as few as two flowers may be present (or sometimes reduced to one in *M. alvaroi* or in *M. amanda*). The peduncles are round in cross-section; the floral bracts are often inflated; the ovaries are carinate or crested; the sepals are connate into a shallow cup or a cylindrical tube; the petals are thin to membranous, denticulate to serrate, and sometimes without a callus; the lip is usually divided by lateral folds into a hypochile and a smaller, rounded epichile.

Species: *M. abbreviata* Rchb.f.
M. alvaroi Luer & Escobar
M. amanda Rchb.f. & Warsc. . . . Plate 1.
M. bulbophyllopsis Krzl.
M. caloptera Rchb.f.
M. chaetostoma Luer
M. corazonica Schltr.
M. dalstroemii Luer
M. delphina Luer
M. graminea Luer
M. huebschiana Krzl.
M. hydrae Luer
M. invenusta Luer
M. lehmannii Rchb.f.
M. leptoura Luer
M. melanopus Rchb.f.
M. microsiphon Luer
M. ova-avis Luer
M. pachyura Rchb.f.
M. polysticta Rchb.f.
M. porphyrea Luer & Malo
M. pulcherrima Luer & Andreetta
M. rafaeliana Luer
M. spathulifolia Krzl.
M. tentaculata Luer
M. tridens Rchb.f.
M. zygia Luer & Malo

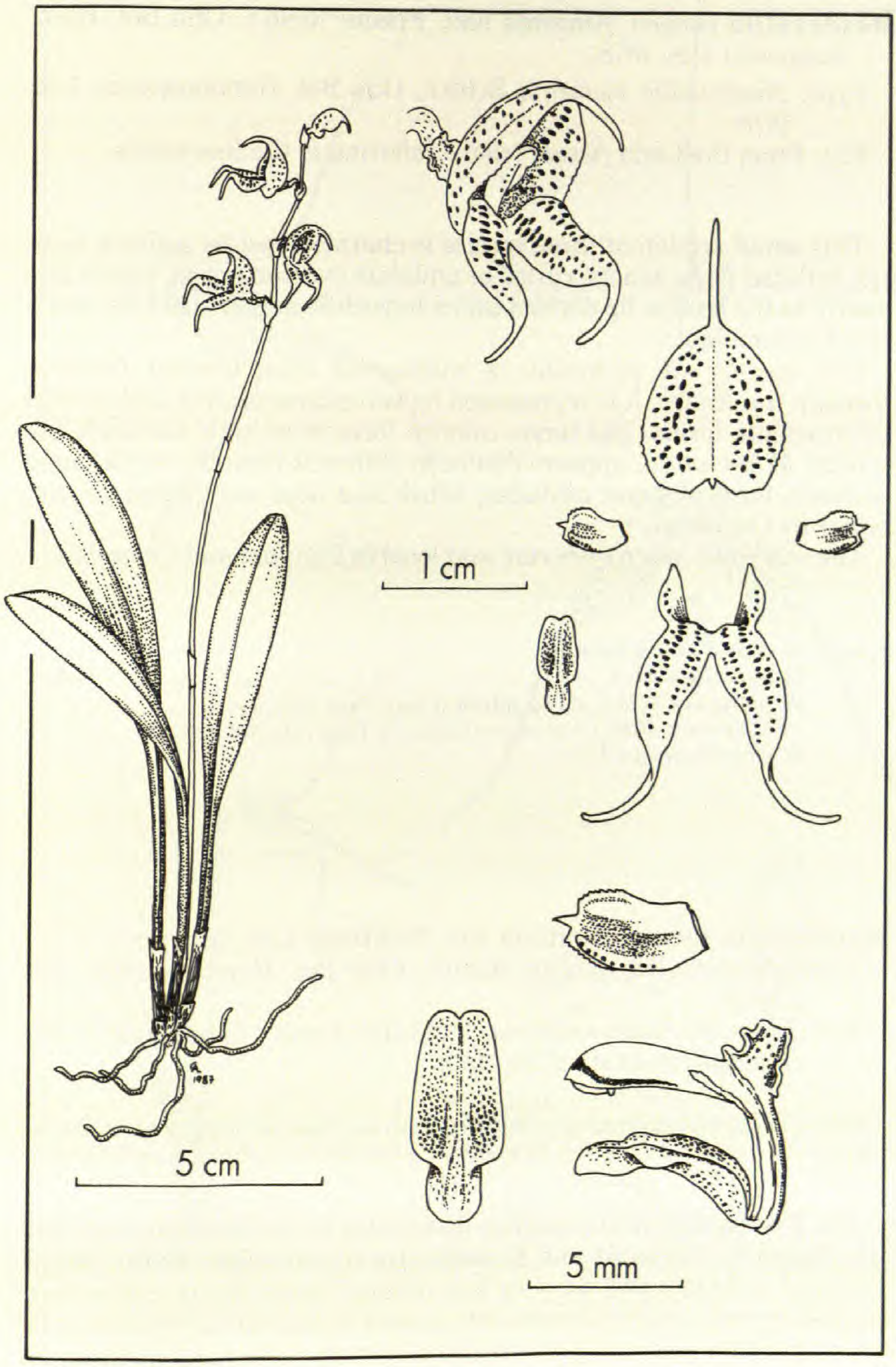

Plate 1. *Masdevallia amada* Rchb. f.

Masdevallia subgen. **Amanda** sect. **Fissae** Rchb.f., Otia Bot. Hamburgensia 1:16, 1878.

Type: *Masdevallia picturata* Rchb.f., Otia Bot. Hamburgensia 1:16, 1878.

Ety.: From the Latin *fissus*, "cleft," referring to the free sepals.

This small section of three species is characterized by solitary flowers, inflated floral bracts, curled or undulate ovarian crests, sepals free nearly to the base, a lip divided into a hypochile and an epichile, and a short column-foot.

One species (*M. picturata*) is widespread from Central America through the Andes. It is represented by two extreme forms and several intermediate forms. The large, colorful form from high altitudes, the typical *M. picturata*, appears distinctly different from the weak, more common form of lower altitudes, which has been segregated as var. *minor* by Cogniaux.

The other two species are rare and local in Panama and Colombia.

Species: *M. mutica* Luer & Escobar
M. picturata Rchb. f. ..... Plate 2.
M. picturata Rchb.f. subsp. **minor** (Cogn.) Luer, stat. nov.
M. picturata Rchb.f. var. *minor* Cogn., Fl. Bras. 3(4): 329, 1896.
M. pleurothalloides Luer

Masdevallia subgen. **Amanda** sect. **Nidificae** Luer, sect. nov.

Type: *Masdevallia nidifica* Rchb.f., Otia Bot. Hamburgensia 1:18, 1878.

Ety.: From the Latin *nidificus*, "built like a nest," in reference to the caespitose habit of the plant.

Pedunculus uniflorus. Ovarium carinatum. Sepala in cupulam tubumve basi inflatum connata. Pes columnae quam columna longiore. Labellum in hypochilium epichiliumque divisum.

The five species of this section, distributed in the mountains of Central America, Colombia and Ecuador, are characterized by the single-flowered inflorescence; more or less inflated floral bracts; carinate or crested ovaries; sepals connate into a short or cylindrical sepaline tube with a bulbous or broad base created in part by a long, curved column-foot; and a lip divided into a hypochile and an epichile which stands erect within the flower.

Species: *M. dynastes* Luer
M. molossoides Krzl.
M. molossus Rchb.f.
M. nidifica Rchb. f. ..... Plate 3.
M. ventricosa Schltr.

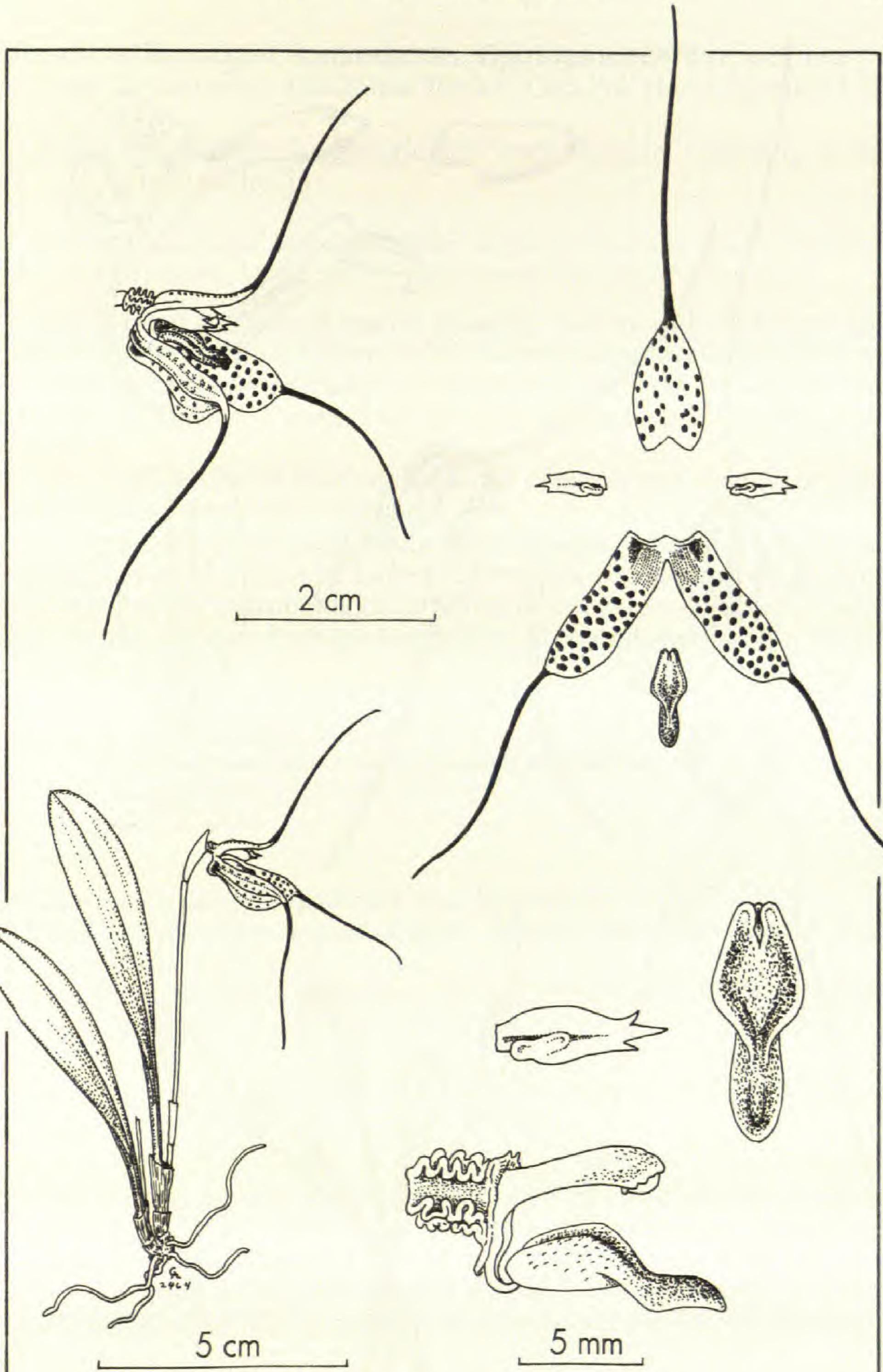

Plate 2. *Masdevallia picturata* Rchb. f.

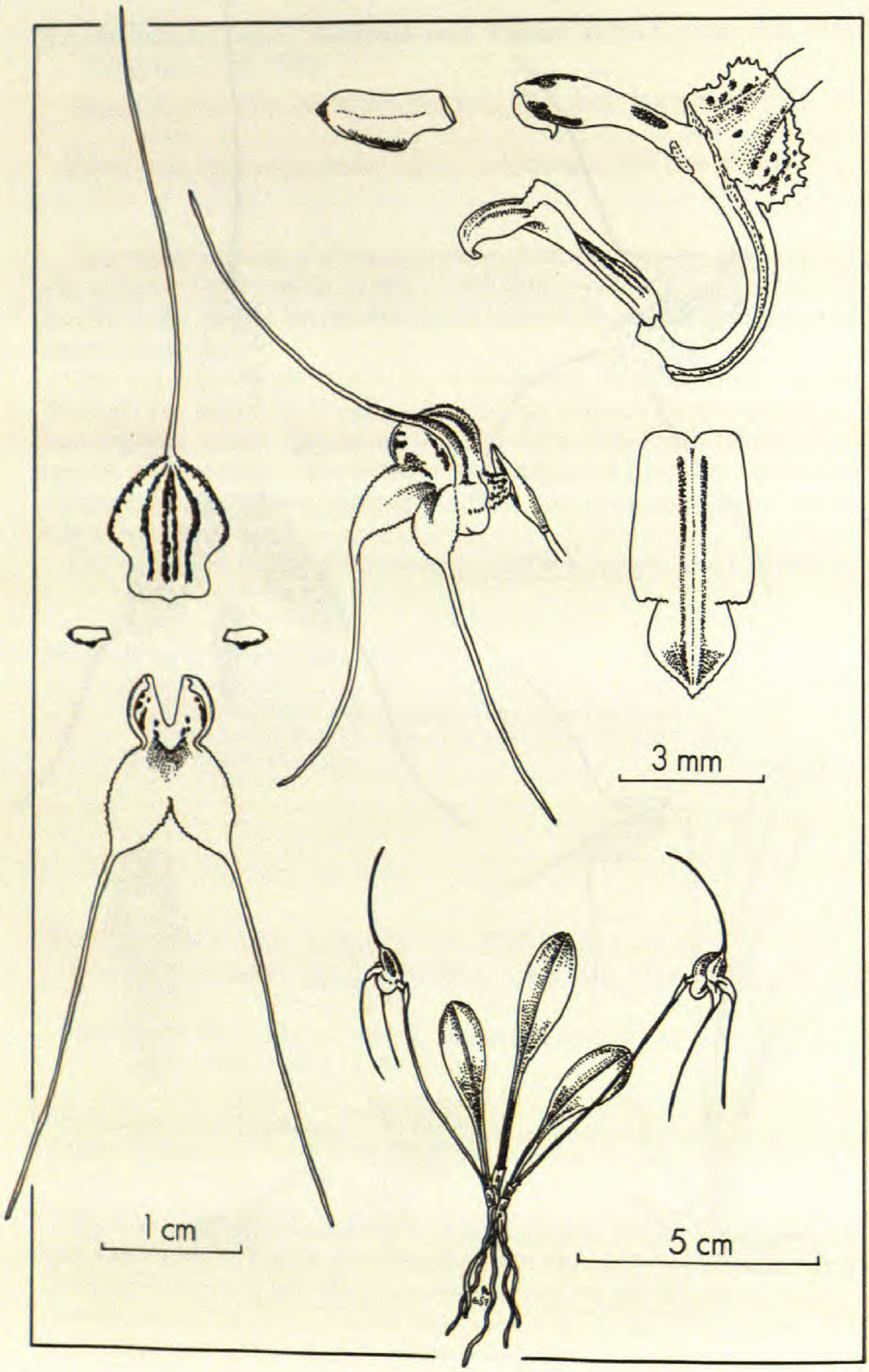

Plate 3. *Masdevallia nidifica* Rchb. f.

Masdevallia subgen. **Amanda** sect. **Ophioglossae** Luer, sect. nov.
Type: *Masdevallia ophioglossa* Rchb.f., Otia Bot. Hamburgensia 1:17, 1878.
Ety.: From the Greek *ophioglossa*, "snake-tongue," referring to the shape of the lip.

Pedunculus plerumque uniflorus. Ovarium carinatum. Sepala in tubum cylindricum basi inflatum connata. Labelli epichilium verrucossisimum. Pes columnae brevis.

This section consists of one (or possibly two) small Ecuadorian species characterized by a solitary, white flower; a sepaline tube bulbous at the base; a verrucose epichile of the slender lip; and a short column-foot. On rare occasions a second flower may be produced from the same peduncle.

The combination of the features listed above do not permit this species to be accommodated elsewhere.

A somewhat distant population of much larger habit and flowers was segregated as *M. grossa* by Luer. The two taxa are easily distinguished by sight, but the morphological differences, except for size, do not seem specifically distinct. Perhaps recognition at the subspecific level would solve the problem.

Species: *M. ophioglossa* Rchb. f. ..... Plate 4.
M. ophioglossa Rchb. f. subsp. **grossa** (Luer) Luer stat. nov.
M. grossa Luer, Phytologia 47:64, 1980.

Masdevallia subgen. **Amanda** sect. **Pygmaeae** Luer, sect. nov.
Type: *Masdevallia pygmaea* Krzl., Repert. Spec. Nov. Regni Veg. Beih. 34:92, 1925.
Ety.: From the Latin *pygmaeus*, "dwarf," referring to the habit of the plant.

Pedunculus uniflorus. Ovarium carinatum echinatum papillosumve. Sepala in cupulam connata. Labellum integrum vel plus minusve divisum.

This section of five small species is distinguished by the carinate ovaries, more or less echinate or papillose, the projections continuing forward onto the carinate veins of the sepals; the sepals are connate into a short tube or cup; the callus of the petals is usually produced into a basal tooth; and the lip is entire or indistinctly divided by marginal folds.

Perhaps these species could be separated into other subgenera on the basis of the lips, but in spite of this difference, they seem to form a unit which seems more closely allied to subgen. *Amanda* than to subgen. *Masdevallia*. The species are distributed from Costa Rica to Bolivia.

Species *M. anachaeta* Rchb.f.
M. erinacea Rchb.f. ..... Plate 5.
M. hoeijeri Luer & Hirtz
M. pterygiophora Luer & Escobar
M. pygmaea Krzl.

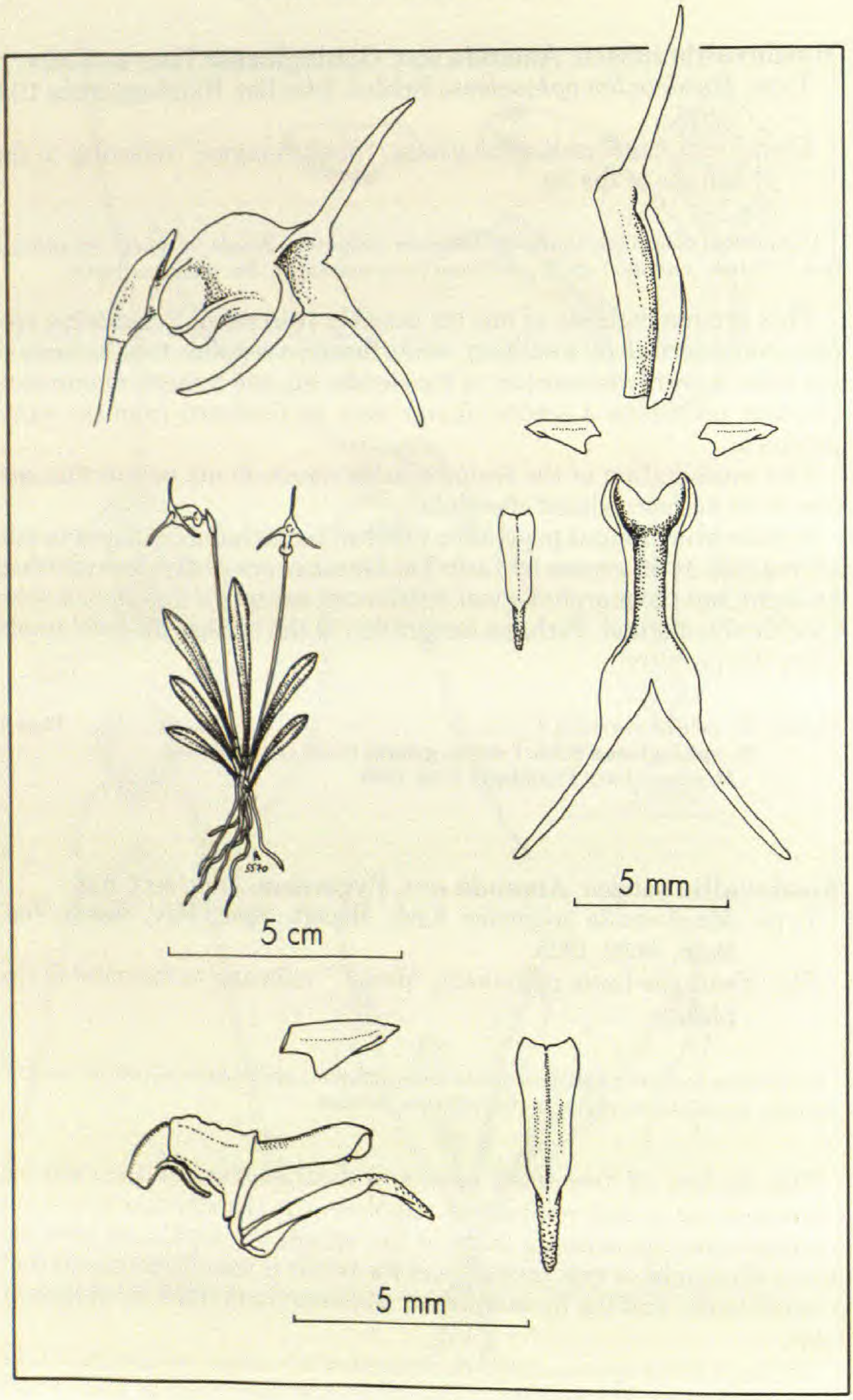

Plate 4. *Masdevallia ophioglossa* Rchb. f.

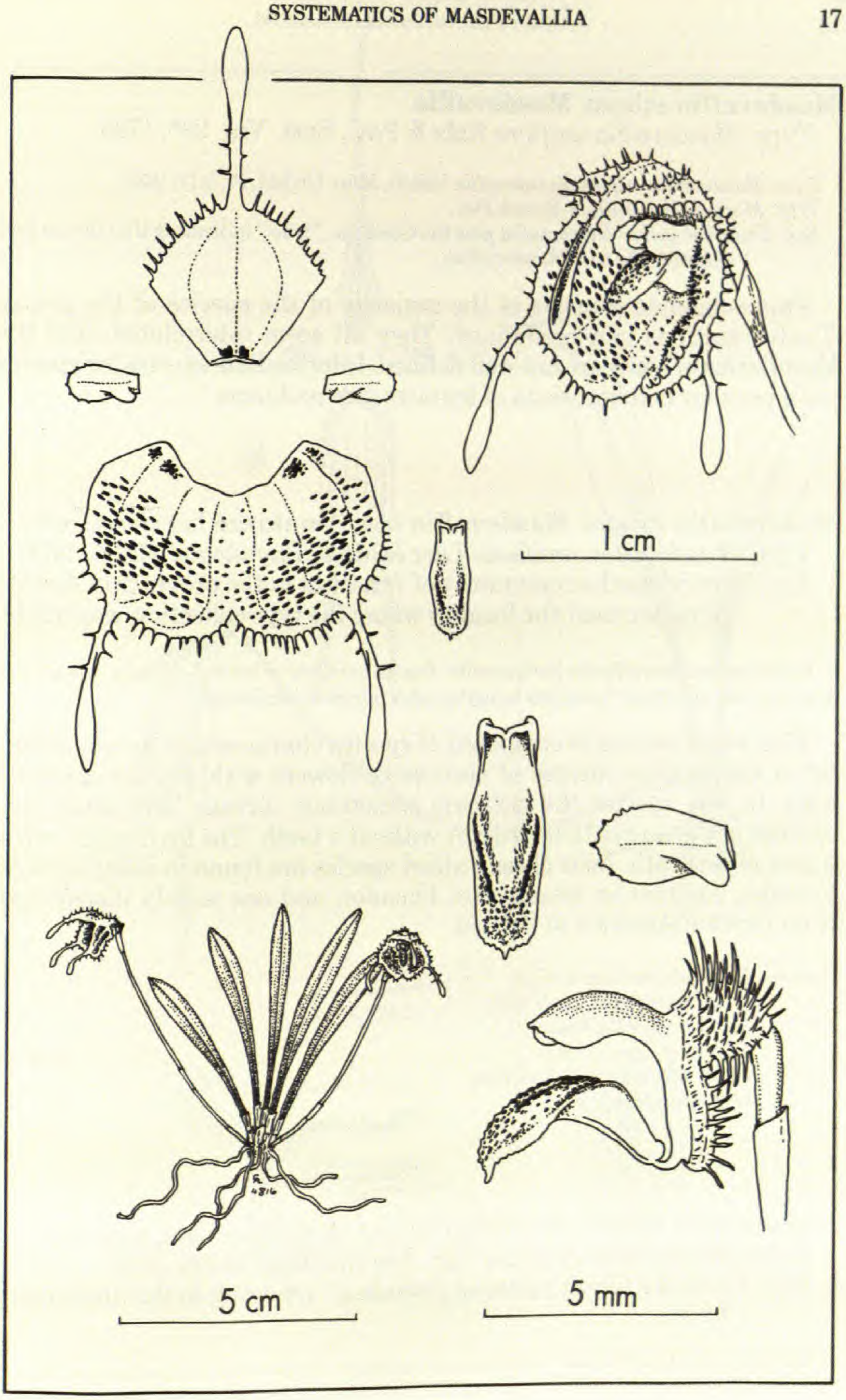

Plate 5. *Masdevallia erinacea* Rchb. f.

Masdevallia subgen. **Masdevallia**

Type: *Masdevallia uniflora* Ruíz & Pav., Syst. Veg. 238, 1798.

Syn.: *Masdevallia* sect. *Eumasdevallia* Veitch, Man. Orchid. Pl. 5:17, 1889.
Type: *Masdevallia uniflora* Ruíz & Pav.
Ety.: From the genus *Masdevallia* plus the Greek *eu-*, "true," indicating that the section contains the true Masdevallias.

This subgenus consists of the majority of the species of the genus. Twelve sections can be defined. They all seem interrelated, and the boundaries of some are not well defined. Intermediate species, or species with peculiar combinations of features, are problems.

Masdevallia subgen. **Masdevallia** sect. **Amaluzae** Luer, sect. nov.

Type: *Masdevallia amaluzae* Luer & Malo, Phytologia 39:185, 1978.
Ety.: Named for the community of Amaluza in the province of Azuay, Ecuador, near the locality where the type collection was made.

Racemus successiviflorus horizontalis. Sepala caudata in tubum connata. Petala callosa cum sineve dente. Labellum integrum plus minusve bicallosum.

This small section is composed of species characterized by a horizontal or descending raceme of successive flowers with slender sepaline tails. In one species the tails are sometimes clavate. The petals are usually acute and callous with or without a tooth. The lip is entire with a pair of low calli. Four closely allied species are found in southeastern Ecuador, another in westcentral Ecuador, and one widely distributed from Central America to Bolivia.

Species: *M. amaluzae* Luer & Malo
M. carmenensis Luer & Malo
M. naranjapatae Luer
M. patula Luer & Malo ..... Plate 6.
M. sanchezii Luer & Andreetta
M. zahlbruckneri Krzl.

Masdevallia subgen. **Masdevallia** sect. **Aphanes** Luer, sect. nov.

Type: *Masdevallia aphanes* Kgr., Die Orchidee 30:196, 1979.
Ety.: From the Greek *aphanes*, "obscure," referring to the diminutive habit.

Racemus successiviflorus. Ovarium plus minusve papillosum verrucosumve. Sepala anguste triangularia in tubum connata. Petala callosa. Labellum bicallosum apice laeve.

Three very small species, found in Ecuador, Peru and Bolivia, and characterized by a raceme of successive, tailless flowers, comprise this section. The ovaries are more or less verrucose or papillose. The petals are callous, that of *M. scopaea* forming a short, obtuse tooth. The lips are ligulate, smooth or cellular-papillose at the apex.

Species: *M. aphanes* Kgr. ..... Plate 7.
M. capillaris Luer
M. scopaea Luer & Vásquez

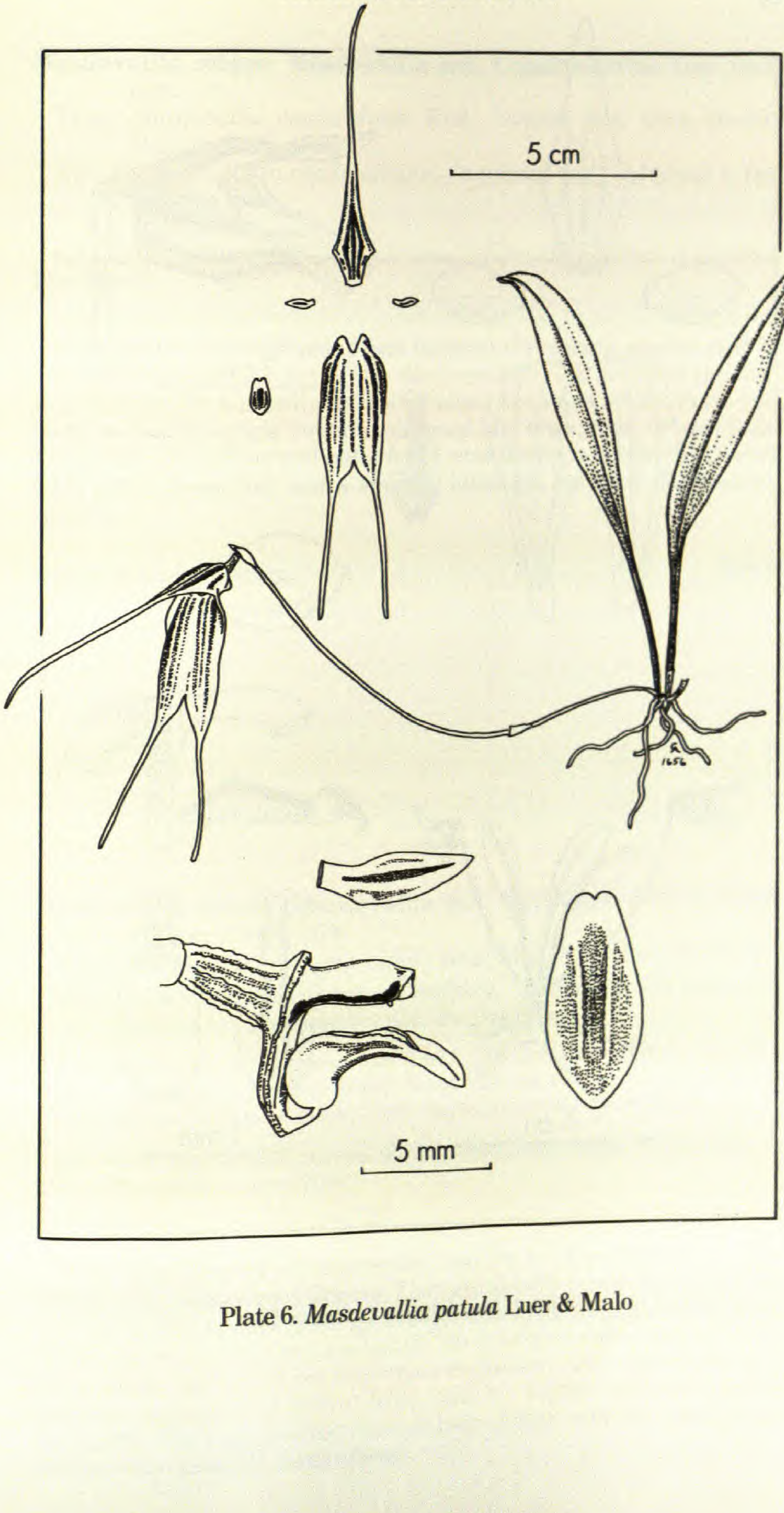

Plate 6. *Masdevallia patula* Luer & Malo

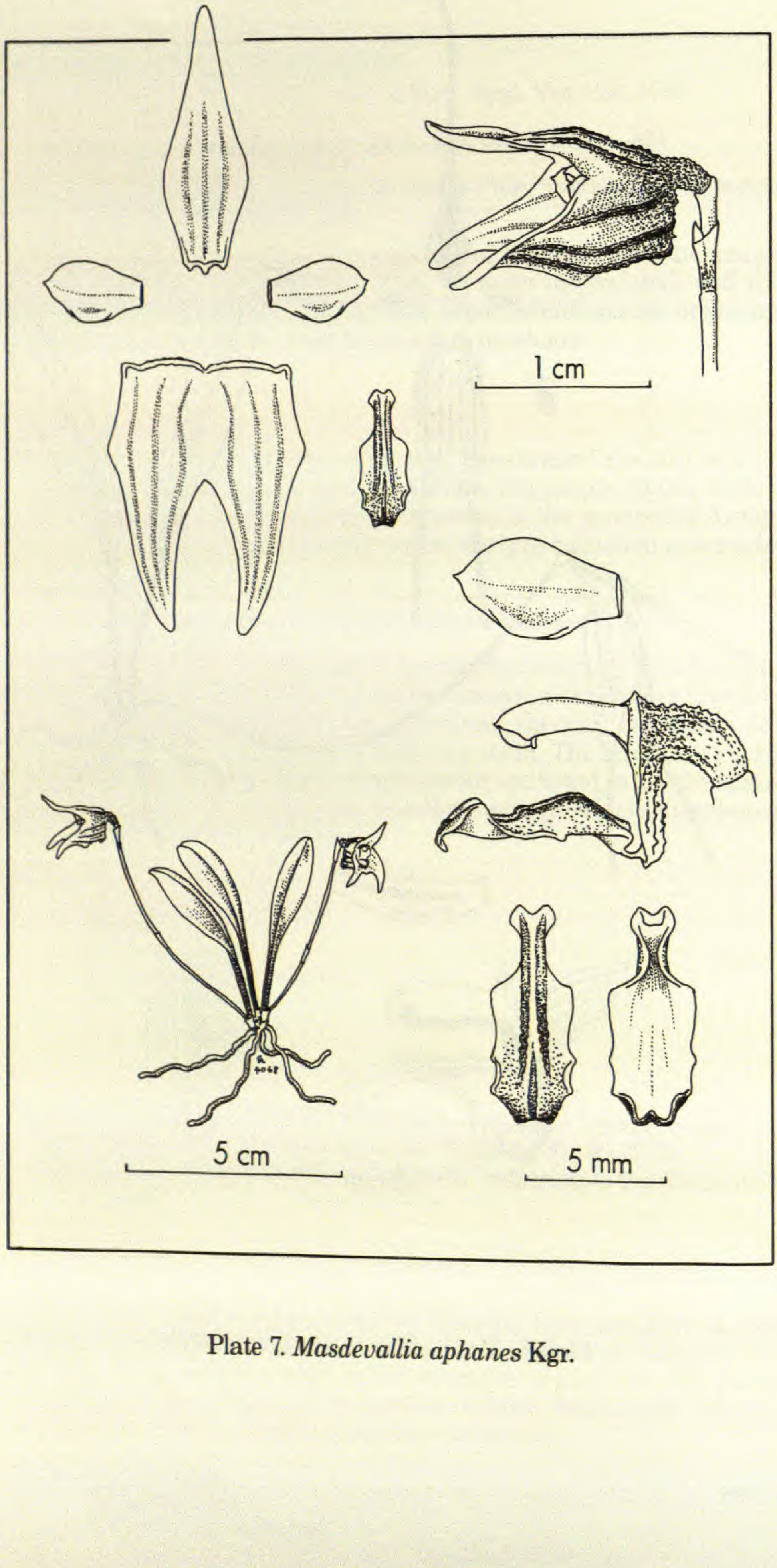

Plate 7. *Masdevallia aphanes* Kgr.

Masdevallia subgen. **Masdevallia** sect. **Caudivolvulae** Luer, sect. nov.

Type: *Masdevallia caudivolvula* Krzl., Notizbl. Bot. Gart. Berlin-Dahlem 8:128, 1922.

Ety.: From the Latin *caudivolvulus*, "a twisted tail," referring to the sepaline tails.

Pedunculus uniflorus. Caudae sepalorum tortae. Labellum in hypochilium et epichilium laeve divisum.

This section is composed of one unusual Colombian species that is not accommodated by any of the other sections. The sepals of the solitary flowers are markedly thickened along the veins on the inner surfaces, and at the apices they are continued into thick, rigid, twisted tails. The petals are callous without a tooth, and the lip is divided by lateral folds into a hypochile and a smooth, although minutely denticulate, epichile.

Species: *M. caudivolvula* Krzl. ..... Plate 8.

Masdevallia subgen. **Masdevallia** sect. **Coriaceae** Rchb.f., Gard. Chron. 1:240, 1874.

Type: *Masdevallia coriacea* Lindl., Ann. Mag. Nat. Hist. 15:257, 1845.

Ety.: From the Latin *coriaceus*, "leathery," referring to the texture of the leaves and possibly also the flowers.

Syn.: *Masdevallia* sect. *Leontoglossae* Rchb.f., Otia Bot. Hamburgensia 1:15, 1878.

Type: *Masdevallia leontoglossa* Rchb.f., Bonplandia 3:69, 1855.

Ety.: From the Greek *leontoglossa*, "a lion tongue," referring to the rough lip.

Syn.: *Masdevallia* subsect. *Coriaceae* (Rchb.f.) Veitch, Man. Orchid. Pl. 5:18, 1889.

Type: *Masdevallia coriacea* Rchb.f.

This large section of interrelated species is characterized by the fleshy, often malodorous flowers. They are usually borne as single flowers, but a few species are successively flowered, the character upon which the two subsections are based. The petals are cartilaginous without a tooth, but an obtuse angle may be present. The lip is thick and ligulate, undivided by lateral folds, and the usually rounded apex is verrucose. The base is often more or less cordate with the basal lobes concave and possibly nectariferous.

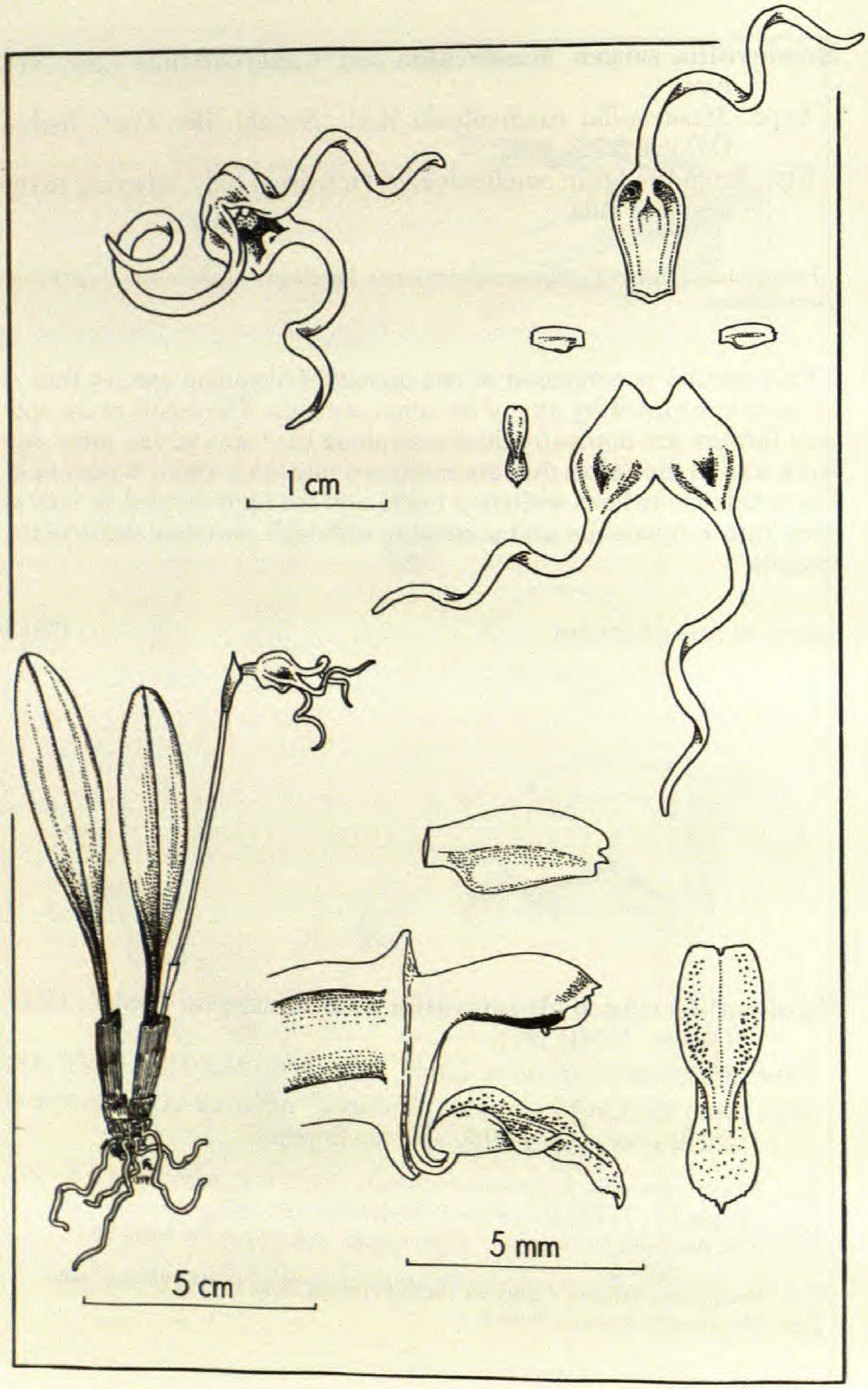

Plate 8. *Masdevallia caudivolvula* Krzl.

Subsect. **Coriaceae** (Rchb.f.) Veitch, Man. Orchid. Pl. 5:18, 1889.
Type: *Masdevallia coriacea* Lindl., Ann. Mag. Nat. Hist. 15:257, 1845.

The majority of the species of the section are single-flowered, and they are contained in this large subsection. They are all Andean in origin except for one species (*M. cupularis*) in Costa Rica.

One large, pleomorphic species (*M. coriacea*) is represented by two extremes and several, intermediate forms. The typical, tall, long-pedunculate, pale, large-flowered plants found around Bogotá, Colombia, appear distinctly different from the colorful, small-flowered, short-pedunculate plants found elsewhere, but no better specific differences exist. The status of subspecies is proposed for the latter.

Species: *M. angulata* Rchb.f.
M. atahualpa Luer
M. cacodes Luer & Escobar
M. caesia Roezl
M. campyloglossa Rchb.f.
M. civilis Rchb.f.
M. colossus Luer
M. coriacea Lindl. ..... Plate 9.
M. coriacea Lindl. subsp. **bonplandii** (Rchb. f.) Luer, stat. nov.
M. bonplandii Rchb.f., Bonplandia 3:69, 1855.
M. cupularis Rchb.f.
M. elephanticeps Rchb.f.
M. foetens Luer & Escobar
M. fractiflexa Lehm. & Krzl.
M. fragrans Woolw.
M. hylodes Luer & Escobar
M. hystrix Luer & Hirtz
M. leontoglossa Rchb.f.
M. macroglossa Rchb.f.
M. maloi Luer
M. misasii Braas
M. mooreana Rchb.f.
M. murex Luer
M. oscarii Luer & Escobar
M. pachyantha Rchb.f.
M. pardina Rchb.f.
M. peristeria Rchb.f.
M. picea Luer
M. platyglossa Rchb.f.
M. pyxis Luer
M. rigens Luer
M. sanctae-rosae Krzl.
M. semiteres Luer & Escobar
M. sororcula Rchb.f.
M. sumapazensis Ortiz
M. torta Rchb.f.
M. velifera Rchb. f.

Subsect. **Durae** Luer, subsect. nov.
Type: *Masdevallia dura* Luer, Phytologia 39:197, 1978.
Ety.: From the Latin *durus*, "hard," in reference to the texture of the flowers.

Inflorescentia successiviflora.

This subsection is composed of the few species of the section that are successively flowered. Three are Andean in origin; *M. utriculata* is Panamanian.

Species: *M. ayabacana* Luer
M. dura Luer ..... Plate 10.
M. panguiensis Luer & Andreetta
M. utriculata Luer

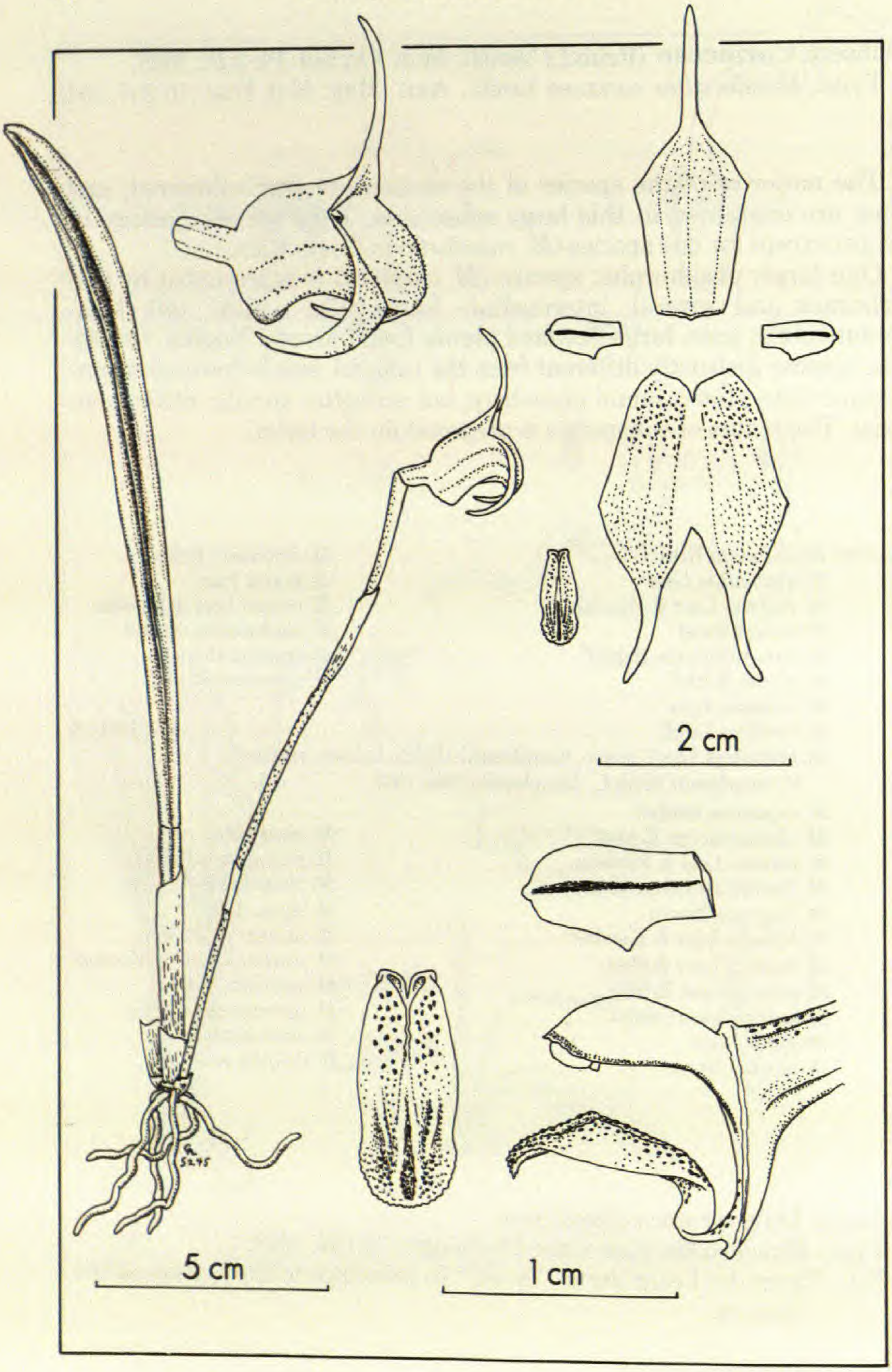

Plate 9. *Masdevallia coriacea* Lindl.

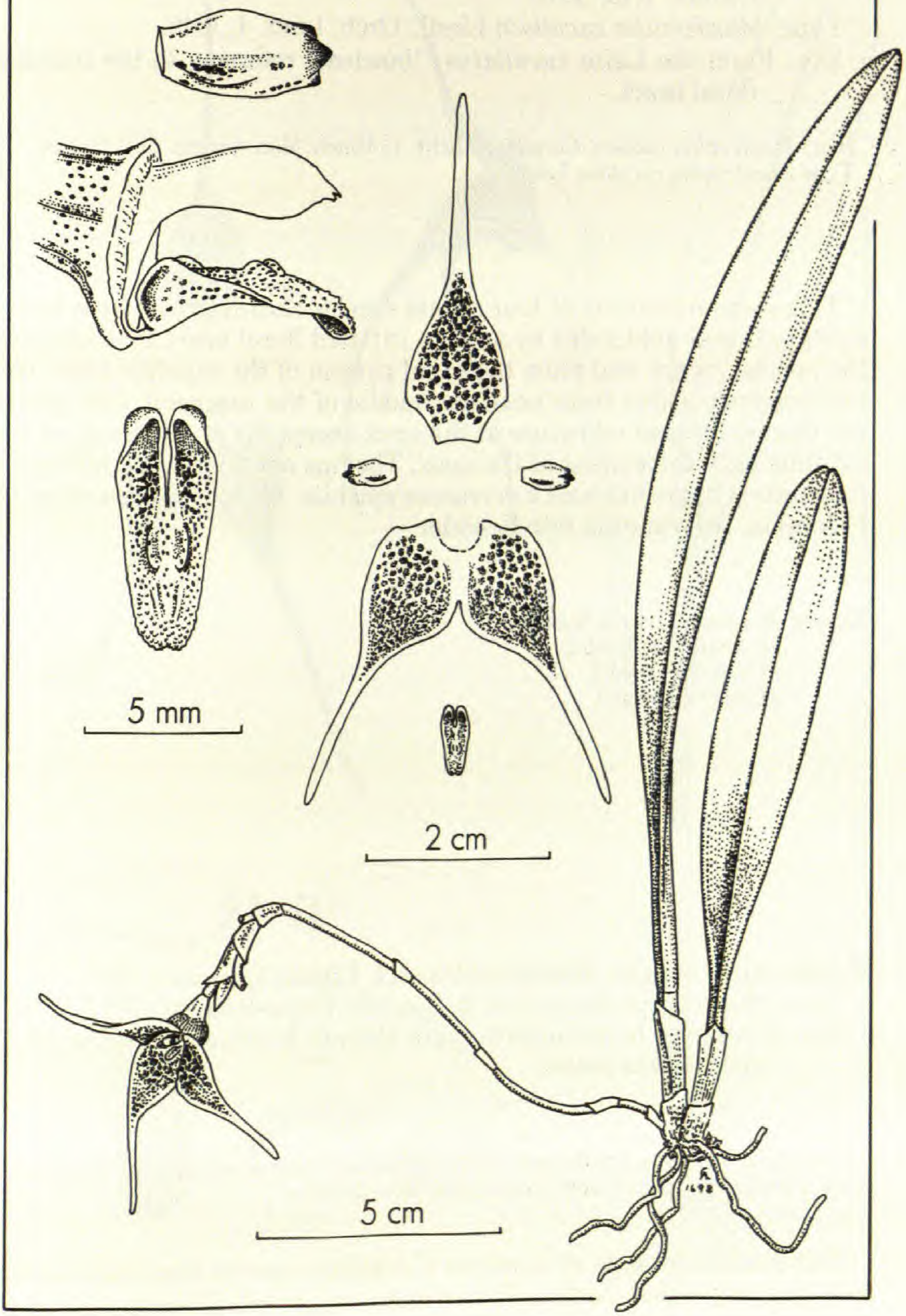

Plate 10. *Masdevallia dura* Luer

Masdevallia subgen. **Masdevallia** sect. **Cucullatae** Rchb.f., Gard. Chron. 1:72, 1878.
Type: *Masdevallia cucullata* Lindl., Orch. Lind. 4, 1846.
Ety.: From the Latin *cucullatus*, "hooded," referring to the inflated floral bract.

Syn.: *Masdevallia* subsect. *Cucullatae* (Rchb. f.) Veitch, Man. Orchid. Pl. 5:18, 1889.
Type: *Masdevallia cucullata* Lindl.

This section consists of four robust species characterized by a large, solitary flower subtended by a large, inflated floral bract that encloses the pedicel, ovary and often the basal portion of the sepaline tube. The inflorescence arises from near the middle of the ramicaul. The petals are channeled and verrucose at the apex except for *M. macrura* which exhibits only thickening at the apex. The lips are divided by marginal folds into a hypochile and a verrucose epichile. All four species occur in Colombia, two ranging into Ecuador.

Species: *M. cerastes* Luer & Escobar
M. corniculata Rchb.f.
M. cucullata Rchb.f. ..... Plate 11.
M. macrura Rchb.f.

Masdevallia subgen. **Masdevallia** sect. **Ligiae** Luer, sect. nov.
Type: *Masdevallia ligiae* Luer & Escobar, Orquideologia 15:131, 1982.
Ety.: Named in honor of Sra. Ligia Posada in whose collection this species was found.

Pedunculus uniflorus. Sepala longicaudata in tubum ventricosum connata. Petala sine dente. Labellum in hypochilium et epichilium laeve divisum.

This section consists of a unique Colombian species that does not fit well into any other section. It has been suspected of being a hybrid, possibly between a species of *M.* subsect. *Saltatrices* and a species of sect. *Polyanthae,* but that seems very unlikely. The inflorescence is single-flowered; the long-tailed sepals are connate into a cylindrical, ventricose tube; the petals are toothless; and the lip is clearly divided into a hypochile and a smooth epichile by marginal folds.

Species: *M. ligiae* Luer & Escobar ..... Plate 12.

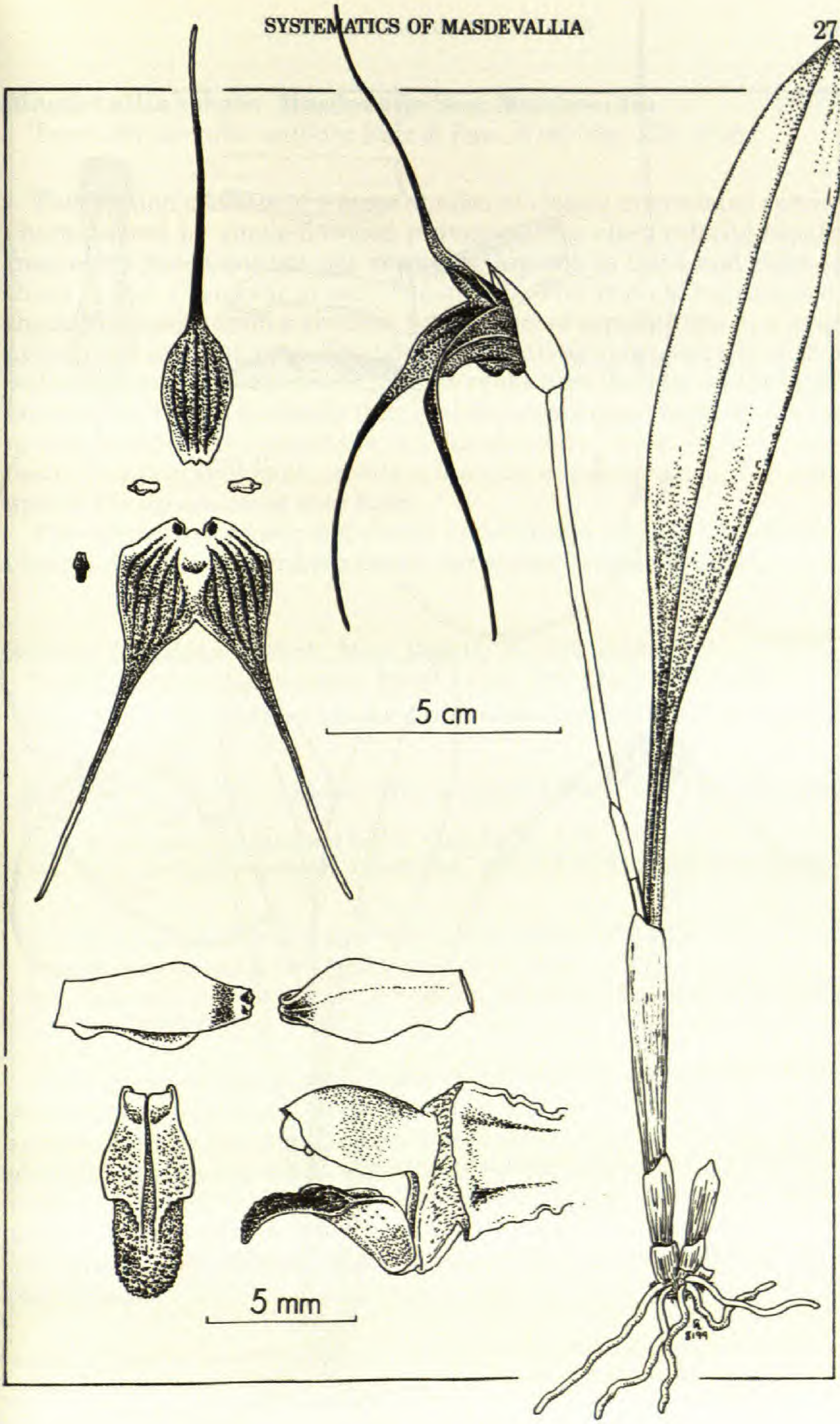

Plate 11. *Masdevallia cucullata* Rchb. f.

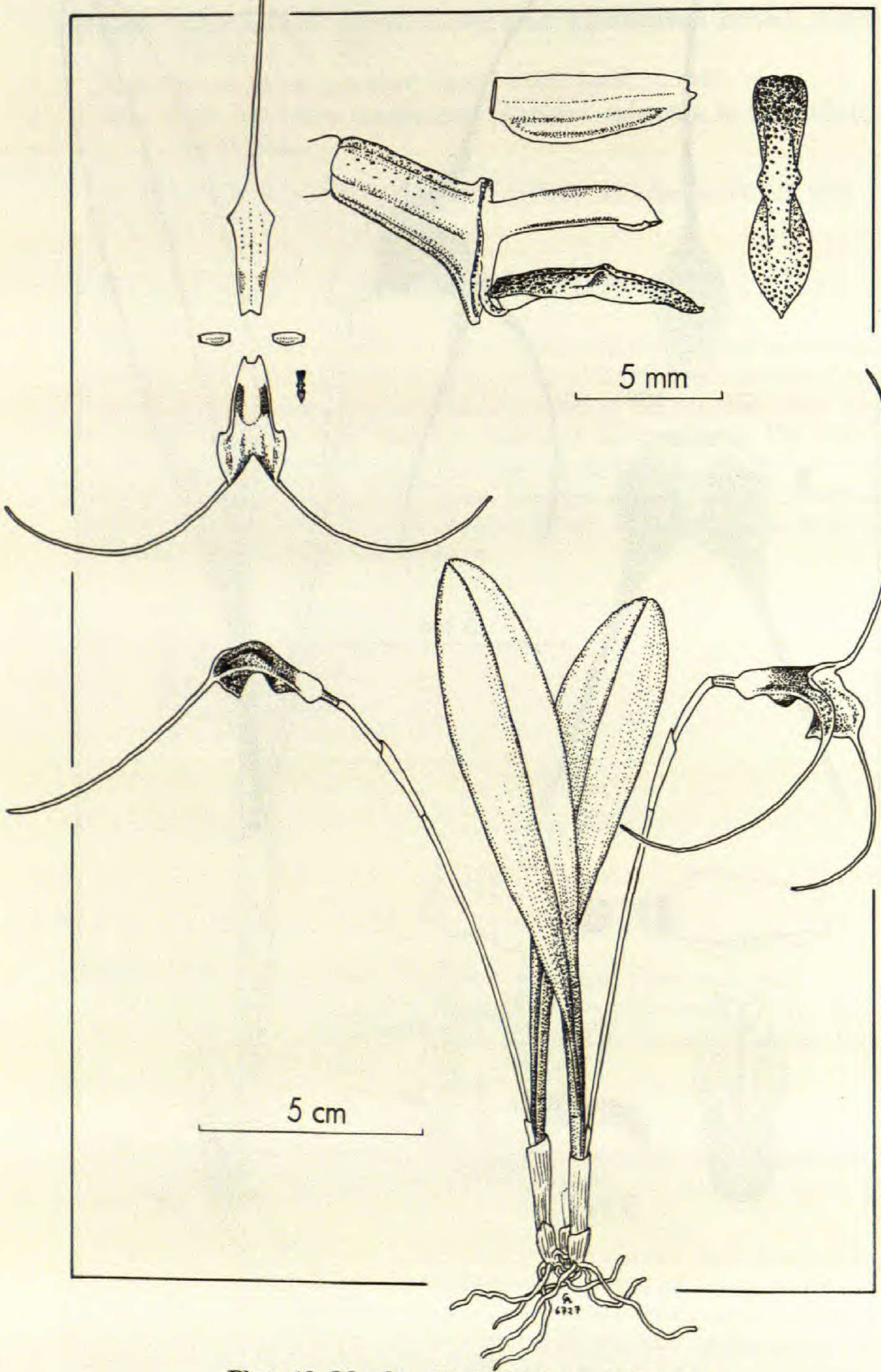

Plate 12. *Masdevallia ligiae* Luer & Escobar

Masdevallia subgen. **Masdevalia** Sect. **Masdevallia**
Type: *Masdevallia uniflora* Ruíz & Pav., Syst. Veg. 238, 1798.

This section consists of a large number of closely interrelated species characterized by single-flowered peduncles. The often colorful sepals, frequently pubescent but not verrucose, are not as thick and rigid as those in sect. *Coriaceae* or sect. *Polyanthae*. The depth of connation of the sepals varies from a shallow, widely spread sepaline cup to a long, cylindrical sepaline tube. The petals are cartilaginous, usually with a well-developed, retrorse tooth from the callus near the base on the labellar margin. The lip is usually thin, and the apex with or without a callus is usually smooth or sometimes cellular-glandular (echinate in *M. echinata*). The disc is smooth or with a low pair of parallel calli. The margins of the lip are never with folds.

The species are widely distributed in the Andes; none is known from Central America or southern Brazil. Six subsections are defined.

Subsect. **Caudatae** Veitch, Man. Orchid. Pl. 5:18, 1889.
Type: *Masdevallia caudata* Lindl., Gen. Sp. Orch. 193, 1833.
Ety.: From the Latin *caudatus*, "with tails," referring to the caudate sepals.

Syn.: *Masdevallia* sect. *Cupulatae* Pfitz. in Engler & Prantl, Nat. Pflanzenfamilien 2(6):136, 1888.
Type: *Masdevallia shuttelworthii* Rchb.f., Gard. Chron. 1:170, 1875.
Ety.: From the Latin *cupulatus*, "cup-shaped," referring to the shape of the sepaline tube.

Syn.: *Masdevallia* sect. *Triangulares* Rchb.f., Gard. Chron, 1:372, 1874.
Type: *Masdevallia triangularis* Lindl., Orch. Lind. 5, 1846.
Ety.: From the Latin *triangularis*, "triangular," referring to the shape of the widely spread flower.

This group of numerous, closely allied species, widespread in the Andes but absent from Central America, is characterized by the widely spread, more or less similar, long-tailed sepals connate basally into a shallow sepaline cup which exposes the petals, column and lip standing more or less erect in the center. The degree of connation of the sepals gradually increases in different species so that this subsection gradually grades into subsect. *Masdevallia*. A few species approach sect. *Oscillantes*

Species: *M. apparitio* Luer & Escobar
M. boliviensis Schltr.
M. bottae Luer & Andreetta
M. caudata Lindl. ..... Plate 13
M. cyclotega Kgr.
M. decumana Kgr.
M. discolor Luer & Escobar
M. estradae Rchb.f.
M. expansa Rchb.f.
M. hubeinii Luer & Würstle
M. instar Luer & Andreetta
M. iris Luer & Escobar
M. klabochorum Rchb.f.
M. leucophaea Luer & Vásquez
M. ludibunda Rchb.f.
M. lychniphora Kgr.
M. pileata Luer and Würstle
M. prodigiosa Kgr.
M. purpurella Luer & Escobar
M. replicata Kgr.
M. sanctae-inesae Luer & Malo
M. setacea Luer
M. triangularis Lindl.
M. tricolor Rchb. f. 1849
M. valenciae Luer & Escobar
M. venatoria Luer & Malo
M. wurdackii C. Schweinf.
M. xanthina Rchb.f.

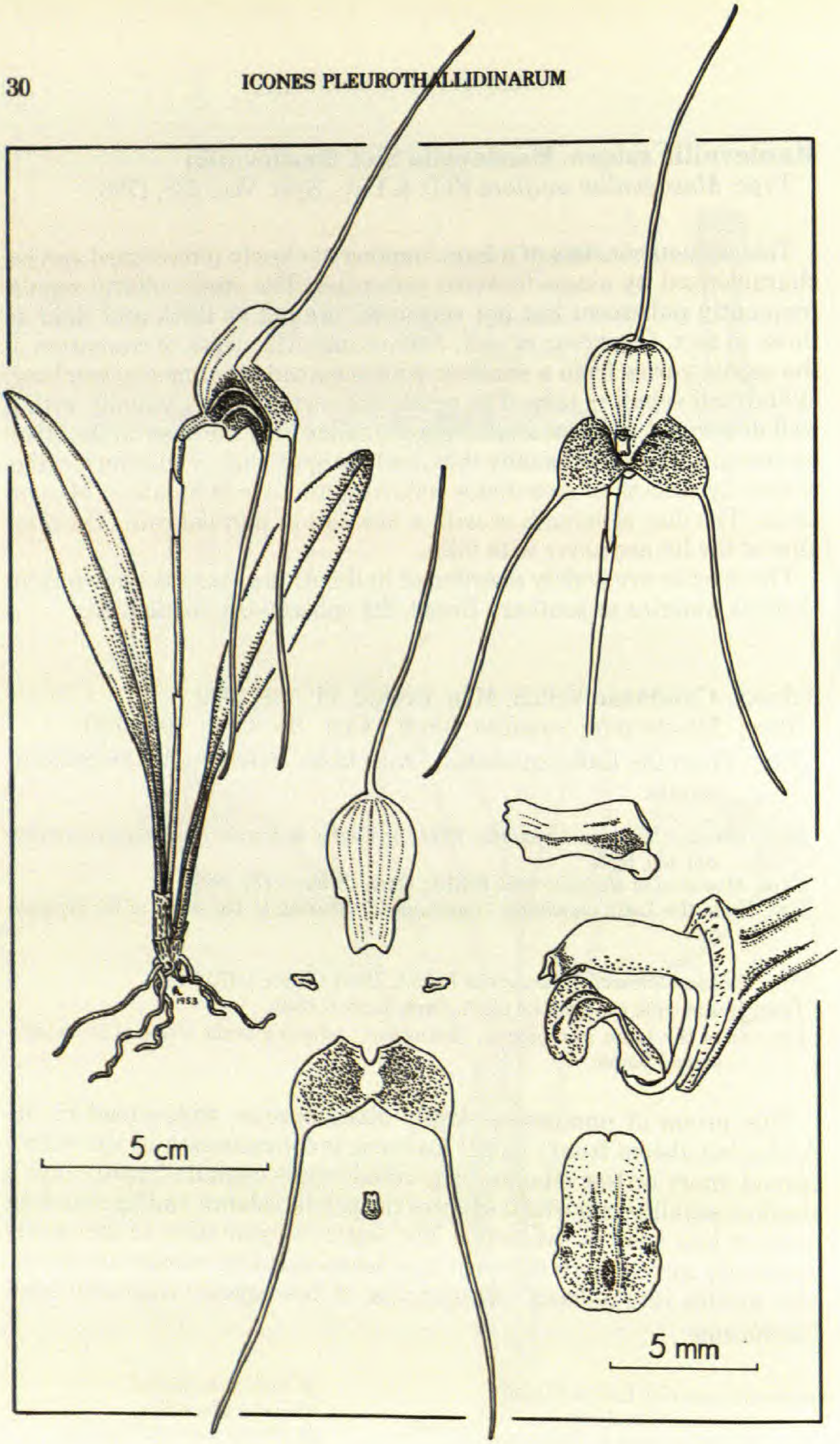

Plate 13. *Masdevallia caudata* Lindl.

Subsect. **Coccineae** Veitch, Man. Orchid. Pl. 5:18, 1889.
Type: *Masdevallia coccinea* Lind. ex Lindl., Orch. Lind. 5, 1846.
Ety.: From the Latin *coccineus*, "deep red to crimson," in reference to the colors of the flowers.

Syn.: *Masdevallia* sect. *Coccineae* (Rchb.f.) Woolw., The Genus *Masdevallia* sect. 2, 1896.
Type: *Masdevallia coccinea* Lind. ex Lindl.

The species of this subsection, found in the Andes of Colombia, Ecuador and Peru, are some of the largest and showiest of the genus. Most are characterized by the long peduncle bearing a large, solitary, colorful flower. The sepals are connate into a slender, cylindrical sepaline tube, but beyond the orifice to the tube the lateral sepals are expanded and considerably larger than the dorsal sepal. The petals and lip are out of sight deep within the sepaline tube.

Species: *M. amabilis* Rchb.f. & Warsc.
M. barlaeana Rchb.f.
M. coccinea Lind. ex Lindl. ..... Plate 14
M. davisii Rchb.f.
M. deformis Krzl.
M. echinata Luer
M. ignea Rchb.f.
M. rosea Lindl.
M. stumpflei Braas
M. veitchiana Rchb.f.
M. venusta Schltr.
M. welischii Luer

Subsect. **Masdevallia**

Syn.: *Masdevallia* sect. *Clausae-porrectae* Rchb.f., Gard. Chron. 2:388, 1875.
Type: *Masdevallia ionocharis* Rchb.f., Gard. Chron. 2:388, 1875.
Ety.: From the Latin *clausus*, "closed," and *porrectus*, "stretched outwards and forward," referring to the sepaline tube.

Syn.: *Masdevallia* sect. *Urceolares* Krzl., Repert. Spec. Nov. Regni Veg. Beih. 34:43, 1925.
Type: *Masdevallia urceolaris* Krzl., Notizbl. Bot. Gart. Berlin-Dahlem 8:132, 1922.
Ety.: From the Latin *urceolaris*, "pitcher-shaped," in reference to the shape of the sepaline tube.

This large group of species contains those with a colorful sepaline cup more deeply connate than that of subsect. *Caudatae* without the petals and lip being exposed, and the numerous species with an increasing depth of connation into a tube. Grouped into other subsections are those species with small, whitish, tubular flowers (subsect. *Tubulosae*), those species with the free portions of the lateral sepals widely expanded and larger than the free part of the dorsal sepal (subsect. *Coccineae*), and those species with ventricose sepaline tubes (subsect. *Saltatrices*).
The petals usually have a well-developed tooth at or above the base.

Species: *M. affinis* Lindl.
M. agaster Luer
M. arminii Rchb.f.
M. assurgens Luer & Escobar
M. calocodon Luer & Vásquez
M. chaparensis Hashimoto
M. cinnamomea Rchb.f.
M. clandestina Luer & Escobar
M. condorensis Luer & Hirtz
M. corderoana Lehm. & Krzl.
M. datura Luer & Vásquez
M. elachys Luer
M. elegans Luer & Escobar
M. encephala Luer & Escobar
M. ensata Rchb.f.
M. falcago Rchb.f.
M. figueroae
M. gilbertoi Luer & Escobar
M. glandulosa Kgr.
M. helenae Luer
M. hians Rchb.f.
M. hieroglyphica Rchb.f.
M. hymenantha Rchb.f.
M. ionocharis Rchb.f.
M. laevis Lindl.
M. lamprotyria Kgr.
M. lepida Rchb.f.
M. leucantha Lehm. & Krzl.
M. lineolata Kgr.
M. lucernula Kgr.
M. macropus Lehm. & Krzl.
M. mastodon Rchb.f.
M. mejiana Garay
M. midas Luer
M. nebulina Luer
M. nitens Luer
M. norops Luer & Andreetta
M. notosibirica Maekawa & Hashimoto
M. odontocera Luer & Escobar
M. paivaeana Rchb.f.
M. pandurilabia C. Schweinf.
M. patriciana Luer
M. picta Luer
M. pumila Poepp. & Endl.
M. rimarima-alba Luer
M. roseola Luer
M. scandens Rolfe
M. schmidt-mummii Luer & Escobar
M. selenites Kgr.
M. strumifera Rchb.f.
M. trigonopetala Krzl.
M. uncifera Rchb.f.
M. uniflora Ruíz & Pav. ..... Plate 15.
M. urceolaris Krzl.
M. ustulata Luer
M. vasquezii Luer
M. verecunda Luer
M. yungasensis Hashimoto

Subsect. **Oscillantes** Luer, subsect. nov.

Type: *Masdevallia wageneriana* Lind. ex Lindl., Paxton's Fl. Gard. 3:74, 1852.

Ety.: From the Latin *oscillans*, "oscillating," referring to the thinly hinged lip.

Labellum panduratum basi convexum oscillans.

The peculiar species of this subsection are characterized by an oscillating lip. The lip is held more or less horizontally and loosely, seemingly balanced by a very fine extension from the column-foot to within the cavity beneath the convex base of the more or less pandurate lip. Except for *M. pteroglossa* and *M. wageneriana* from Colombia and Venezuela respectively, the species are found in southern Ecuador and northern Peru.

Species: *M. andreettana* Luer
M. ariasii Luer
M. catapheres Kgr.
M. citrinella Luer & Malo
M. dalessandroi Luer
M. pernix Kgr.
M. persicina Luer
M. phasmatodes Kgr.
M. pteroglossa Schltr.
M. rodolfoi (Braas) Luer
M. rubiginosa Kgr.
M. wageneriana Lind. ex Lindl. ..... Plate 16.

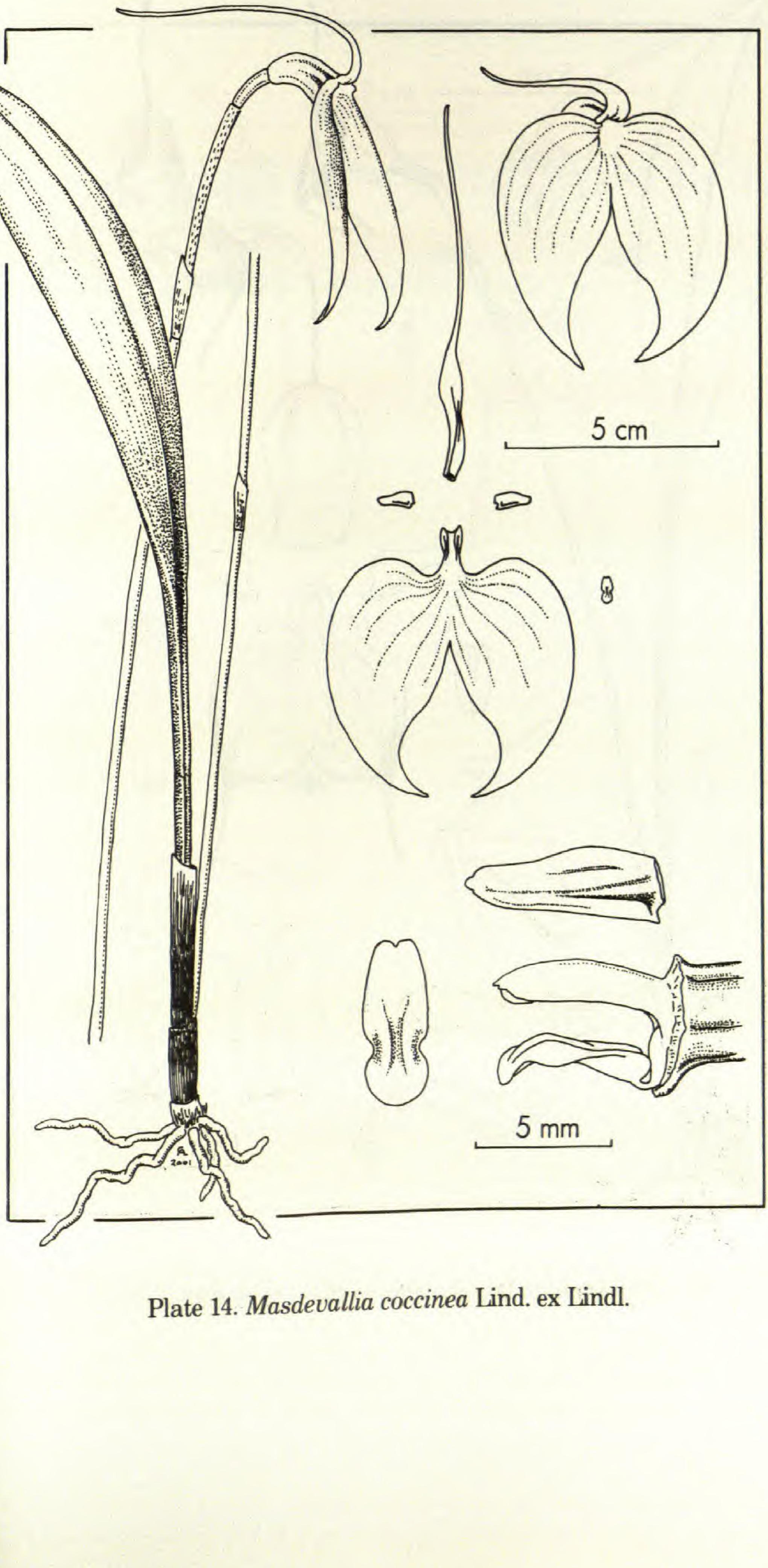

Plate 14. *Masdevallia coccinea* Lind. ex Lindl.

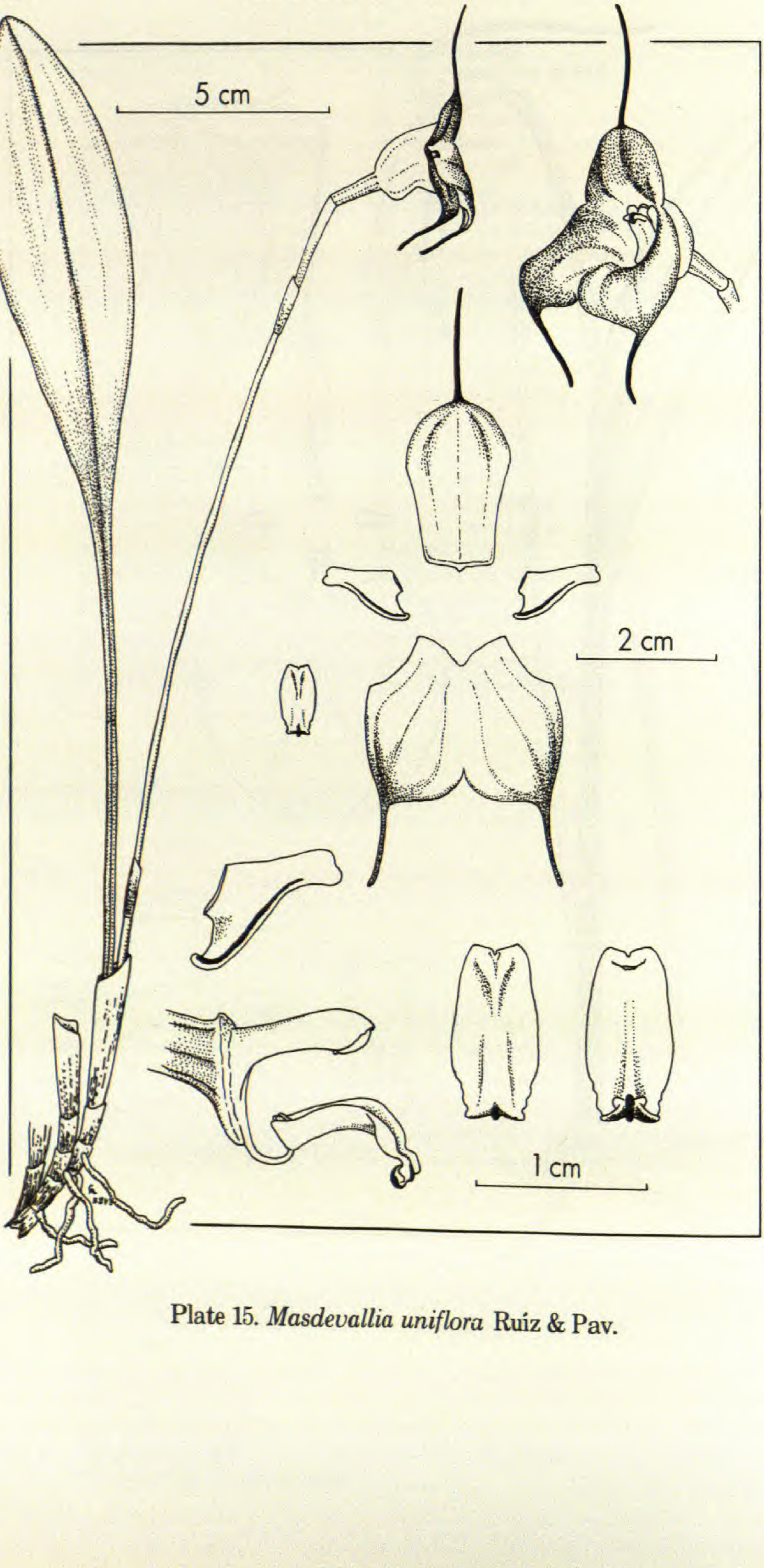

Plate 15. *Masdevallia uniflora* Ruiz & Pav.

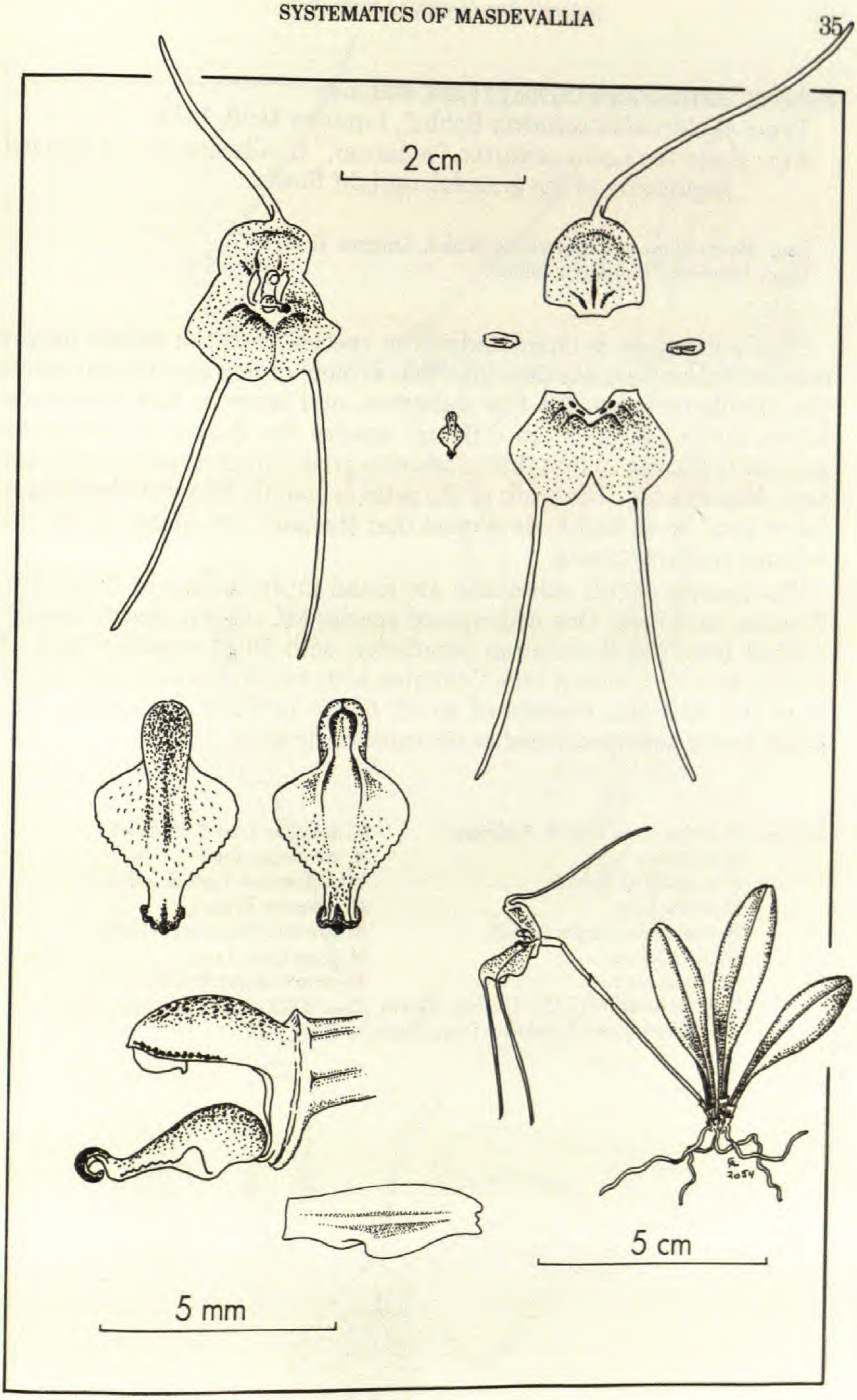

Plate 16. *Masdevallia wageneriana* Lind. ex Lindl.

Subsect. **Saltatrices** (Rchb.f.) Luer, stat. nov.
Type: *Masdevallia saltatrix* Rchb.f., Linnaea 41:10, 1877.
Ety.: From the Latin *saltatrix*, "a dancer," in allusion to the fancied impression of the graceful, upright flower.

Bas.: *Masdevallia* sect. *Saltatrices* Rchb.f., Linnaea 41:10. 1877.
Type: *Masdevallia saltatrix* Rchb.f.

This subsection is characterized by species with the sepals deeply connate into a long sepaline tube that is more or less constricted above the middle or below the free segments, and more or less ventricose below the constriction. In different species the degree of connation gradually lessens so that this subsection grades imperceptibly into subsect. *Masdevallia*. The tooth of the petal is usually less well-developed, but it may be so highly developed that the pair articulates under the column and over the lip.

The species of this subsection are found in the Andes of Colombia, Ecuador and Peru. One wide-spread species (*M. ventricularia*) was described from the Ecuadorian population with short sepaline tails. A widely distributed form from Colombia with sepaline tails much longer than the tube was segregated as *M. filaria* by Luer & Escobar. The latter seems best recognized at the subspecific level.

Species: *M. ampullacea* Luer & Andreetta
M. anemone Luer
M. angulifera Rchb.f.
M. aurea Luer
M. constricta Poepp. & Endl.
M. fuchsii Luer
M. limax Luer
M. ventricularia Rchb. f. subsp. **filaria** (Luer & Escobar) Luer, stat. nov.
M. filaria Luer & Escobar, Orquideología 13:70, 1978.
M. marthae Luer & Escobar
M. mendozae Luer
M. os-draconis Luer & Escobar
M. saltatrix Rchb.f.
M. strobelii Sweet and Garay
M. urosalpinx Luer ..... Plate 17.
M. ventricularia Rchb.f.

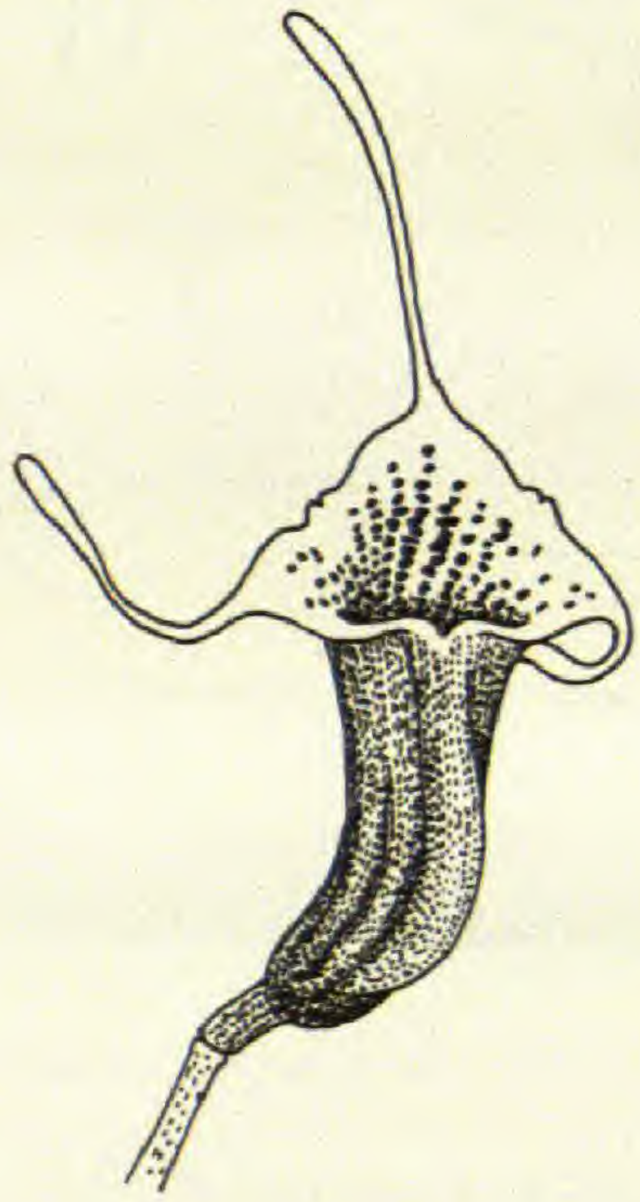

Figure 2. *Masdevallia saltatrix* Rchb. f.

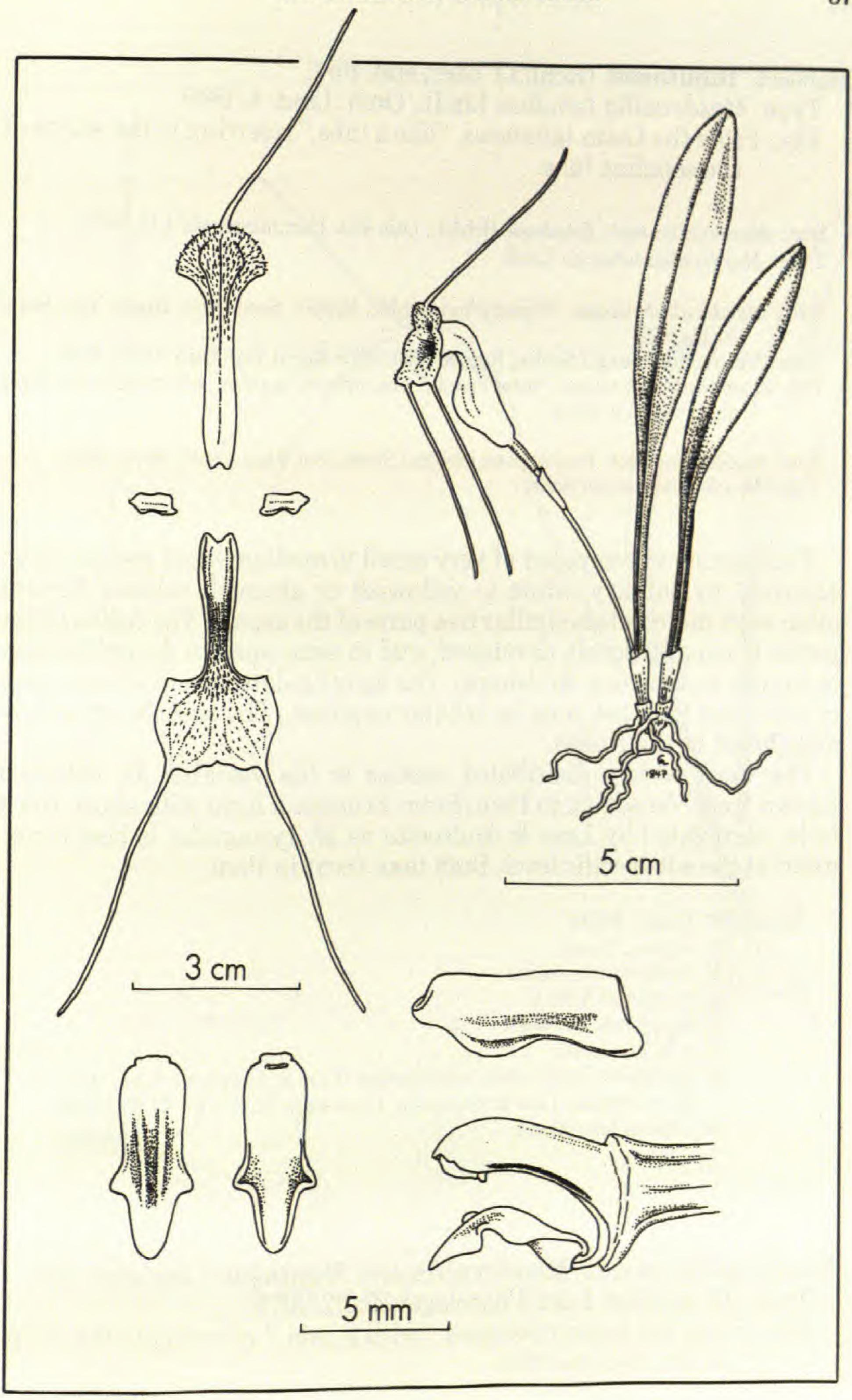

Plate 17. *Masdevallia urosalpinx* Luer

Subsect. **Tubulosae** (Rchb.f.) Luer, stat. nov.
Type: *Masdevallia tubulosa* Lindl., Orch. Lind. 4, 1846.
Ety.: From the Latin *tubulosus*, "like a tube," referring to the shape of the sepaline tube.

Bas.: *Masdevallia* sect. *Tubulosae* Rchb.f., Otia Bot. Hamburgensia 1:14, 1878.
Type: *Masdevallia tubulosa* Lindl.

Syn.: *Masdevallia* subgen. *Triotosiphon* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 10:42, 1922.
Type: *Masdevallia bangii* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 10:41, 1922.
Ety.: From the Greek *trioto-*, "three-eared-," and *siphon*, "a tube," referring to the three short sepaline lobes.

Syn.: *Masdevallia* sect. *Triotosiphon* (Schltr.) Sweet, Bot. Mus. Leafl. 26:40, 1978.
Type: *Masdevallia bangii* Schltr.

This section is composed of very small to medium-sized species characterized by solitary, white to yellowish or greenish tubular flowers often with more or less similar free parts of the sepals. The callus of the petals is usually poorly developed, and in some species the callus may be totally lacking (e.g. *M. bangii*). The lip is ligulate, usually with a pair of calli, and the apex may be cellular-papillose. The species are widely distributed in the Andes.

The most widely distributed species is the variable *M. tubulosa* known from Venezuela to Peru. From Ecuador a form with short, thick tails, segregated by Luer & Andreetta as *M. syringodes* is best recognized at the subspecific level. Both taxa occur in Peru.

Species: *M. bangii* Schltr.
M. irapana Sweet
M. kyphonantha Sweet
M. lansbergii Rchb.f.
M. pseudominuta Sweet
M. tubulosa Lindl. ..... Plate 18.
M. tubulosa Lindl. subsp. **syringodes** (Luer & Andreetta) Luer, stat. nov.
M. syringodes Luer & Andreetta, Phytologia 42:467, 1979.
M. venezuelana Sweet

Masdevallia subgen. **Masdevallia** sect. **Mentosae** Luer, sect. nov.
Type: *M. mentosa* Luer, Phytologia 39:212, 1978.
Ety.: From the Latin *mentosus*, "with a chin," referring to the shape of the sepaline tube.

Inflorescentia successiviflora. Pedunculus triquetrus gracilis. Sepala ecaudata in tubum mentosum connata. Petala callosa sine dente. Labellum ligulatum laeve.

This section is composed of a single, unusual, little Ecuadorian species. The slender, successively flowered peduncle is triquetrous which would place it in *M.* sect. *Polyanthae* if it were not for the entire, smooth lip. Otherwise, it might be included in sect. *Aphanes*.

Species: *M. mentosa* Luer ..... Plate 19.

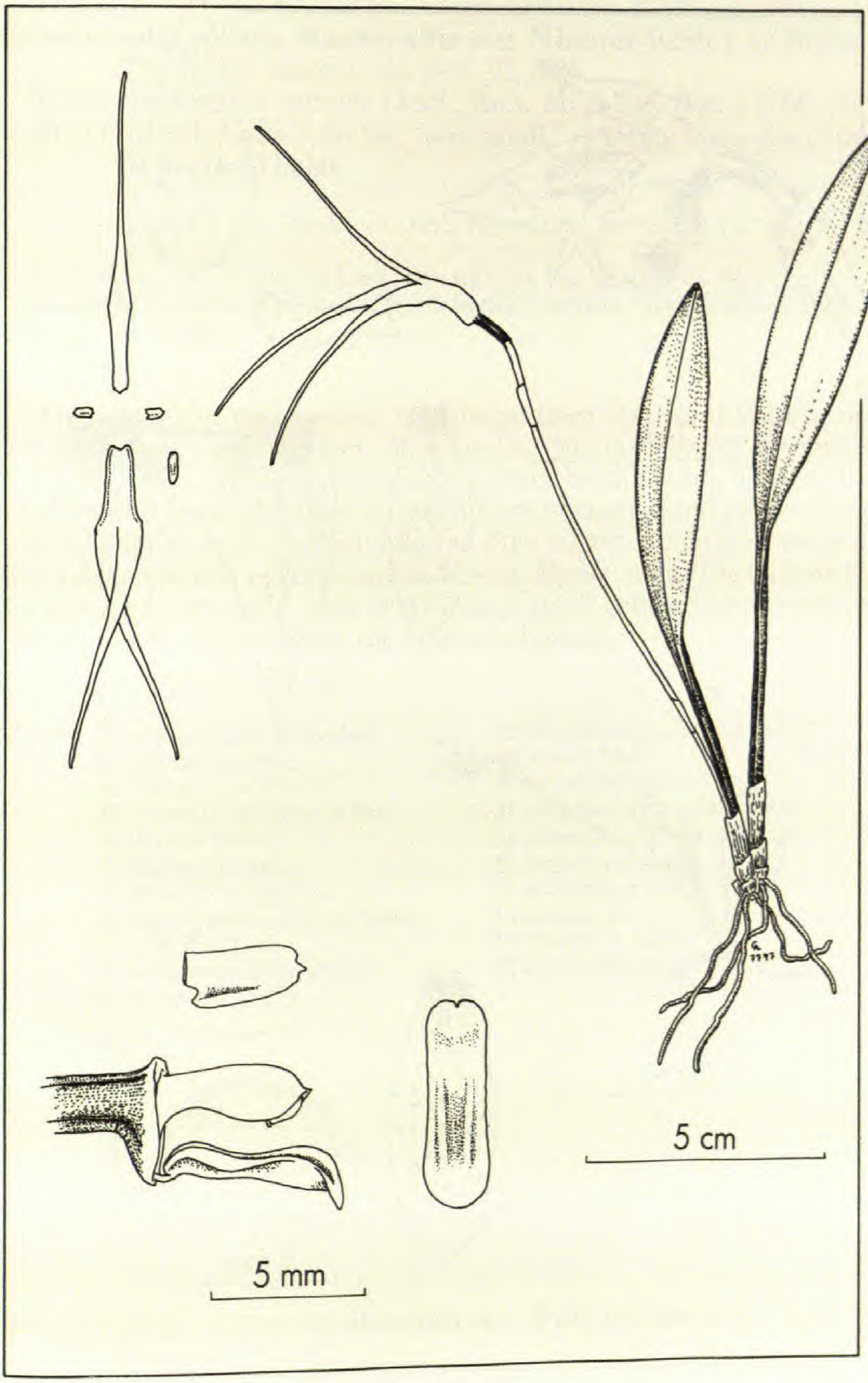

Plate 18. *Masdevallia tubulosa* Lindl.

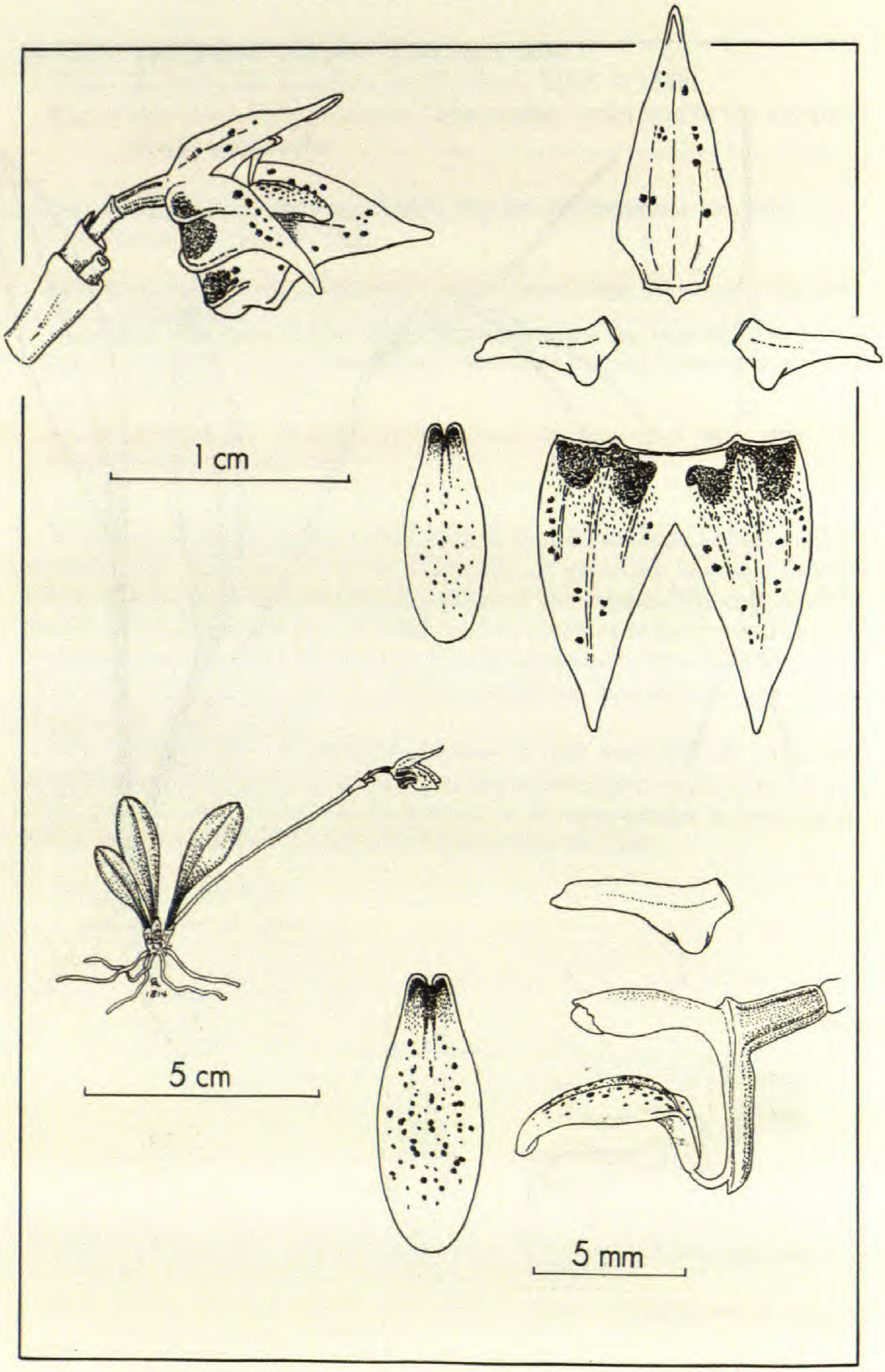

Plate 19. *Masdevallia mentosa* Luer

Masdevallia subgen. **Masdevallia** sect. **Minutae** Rchb. f. ex Woolw., The Genus *Masdevallia* sect. VI, 1896.
Type: *Masdevallia minuta* Lindl., Ann. Mag. Nat. Hist. 12:396, 1842.
Ety.: From the Latin *minutus*, "very small," referring to the size of the flowers and habit.

Syn.: *Masdevallia* sect. *Floribundae* Krzl., Repert. Spec. Nov. Regni Veg. Beih. 34:84, 1925.
Type: *Masdevallia floribunda* Lindl., Edward's Bot. Reg. 29:Misc. 72, 1843.
Ety.: From the Latin *floribundus*, "free-flowering," referring to the floriferous habit of the plant.

The species of this section, distributed from Mexico to Bolivia, are closely allied to *M.* subsect. *Masdevallia*, but the flowers are distinguished by the small, short, usually pointed tooth arising between the middle and lower thirds of the petal from a longitudinal callus above the labellar margin. A second flower often follows the first in many of the species, which never occurs in *M.* sect. *Masdevallia*. The ligulate lip is smooth at the apex, with or without a small callus. In a few exceptions (e.g. *M. scabrilinguis*) the apex is verrucose.

Species: *M. arangoi* Luer & Escobar
M. attenuata Rchb.f.
M. chontalensis Rchb.f.
M. crescenticola Lehm. & Krzl.
M. flaveola Rchb.f.
M. floribunda Lindl.
M. geminiflora Ortiz
M. guayanensis Lindl. ex Benth.
M. gutierrezii Luer
M. herradurae Lehm. & Krzl.
M. laucheana Krzl.
M. livingstoneana Roezl & Rchb.f.
M. minuta Lindl. ..... Plate 20
M. nicaraguae Luer
M. pescadoensis Luer & Escobar
M. plantaginea Poepp. & Endl.
M. scabrilinguis Luer
M. schizopetala Krzl.
M. tonduzii Woolw.
M. tubuliflora Ames
M. wendlandiana Rchb.f.

Masdevallia subgen. **Masdevallia** sect. **Polyanthae** Rchb.f., Gard. Chron. 1:372, 1874.
Type: *Masdevallia polyantha* Lind. ex. Lindl., Orch. Lind. 6, 1846. (*M. Schlimii* Lind. ex Lindl., Orch. Lind. 5, 1846.)
Ety.: From the Greek *polyanthos*, "many-flowered," referring to the inflorescence.

Syn.: *Masdevallia* subsect. *Polyanthae* (Rchb.f.) Veitch, Man. Orchid. Pl. 5:18, 1889.
Type: *Masdevallia polyantha* Lind. ex Lindl.

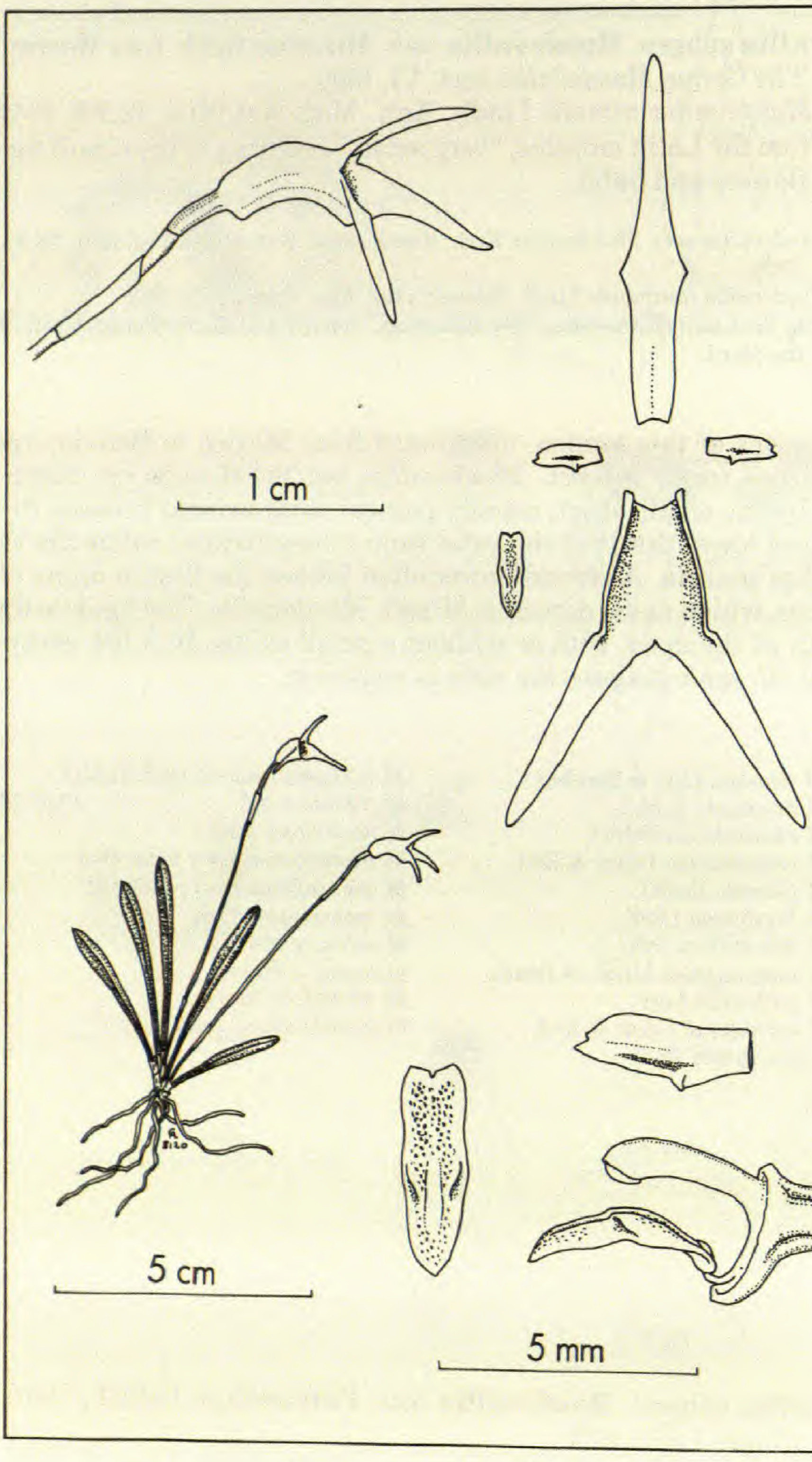

Plate 20. *Masdevallia minuta* Lindl.

The majority of the species of this great section are characterized by peduncles triangular in cross-section. In a few species the peduncle is round, and in one or two species the peduncle varies from round to triquetrous. The inflorescence always bears two or more flowers, simultaneously or successively. The sepals are connate into a tube or cup, sometimes the dorsal sepal free nearly to the base. The petals are calous, but rarely produce a tooth (*M. odontopetala*). The lip is divided by lateral folds into a hypochile and an epichile that is usually verrucose.

Subsect. **Alaticaules** (Krzl.) Luer, stat. nov.
Lectotype here designated: *Masdevallia melanoxantha* Lind. & Rchb.f., Bonplandia 2:283, 1854.
Ety.: From the Latin *alaticaulis*, "with a winged stem," referring to the triquetrous peduncles.

Bas.: *Masdevallia* sect. *Alaticaules* Krzl., Repert. Spec. Nov. Regni Veg. Beih. 34:105, 1925.
Lectotype here designated: *Masdevallia melanoxantha* Lind. & Rchb.f.
Kranzlin designated both *M. melanoxantha* Lind. & Rchb. f. and *M. polyantha* Lind. ex Lindl. as the type of his section *Alaticaules*. *Masdevallia polyantha* is the type of sect. *Polyanthae*.

This large subsection contains the majority of the species which have peduncles triangular in cross-section. Occasional clones of *M. cuprea*, *M. infracta* and *M. tovarensis* produce peduncles round in cross-section. The species of the subsection are widely distributed in the Andes, only a few occurring in Brazil and none in Central America.

Species: *M. aenigma* Luer & Escobar
M. auropurpurea Rchb.f.
M. bicolor Poepp. & Endl. . . . . Plate 21.
M. brachyura Lehm. & Krzl.
M. brenneri Luer
M. buccinator Rchb.f.
M. calagrasalis Luer
M. cardiantha Kgr.
M. carolloi Luer & Andreetta
M. carruthersiana Lehm. & Krzl.
M. cinnamomea Rchb.f.
M. cuprea Lindl.
M. don-quijote Luer & Andreetta
M. dunstervillei Luer
M. echo Luer
M. empusa Luer
M. excelsior Luer & Andreetta
M. guerrieroi Luer & Andreetta
M. guttulata Rchb.f.
M. hepatica Luer
M. impostor Luer & Escobar
M. infracta Lindl.
M. isos Luer
M. kuhniorum Luer
M. maculata Kl. & Karst.
M. medusa Luer & Escobar
M. megaloglossa Luer & Escobar
M. melanoxantha Rchb.f.
M. mezae Luer
M. monogona Kgr.
M. navicularis Garay & Dunsterv.
M. odontopetala Luer
M. phoenix Luer
M. pinocchio Luer & Andreetta
M. portillae Luer & Andreetta
M. posadae Luer & Escobar
M. prosartema Kgr.
M. receptrix Luer & Vásquez
M. rechingeriana Krzl.
M. sanguinea Luer & Andreetta
M. sceptrum Rchb.f.
M. scitula Kgr.
M. scobina Luer & Escobar
M. sernae Luer & Escobar
M. sprucei Rchb.f.
M. stenorhynchos Krzl.
M. theleura Luer
M. tovarensis Rchb.f.
M. trochilus Lind. & André
M. vargasii C. Schweinf.
M. virens Luer & Andreetta
M. virgo-cuencae Luer & Andreetta
M. weberbaueri Schltr.
M. whiteana Luer

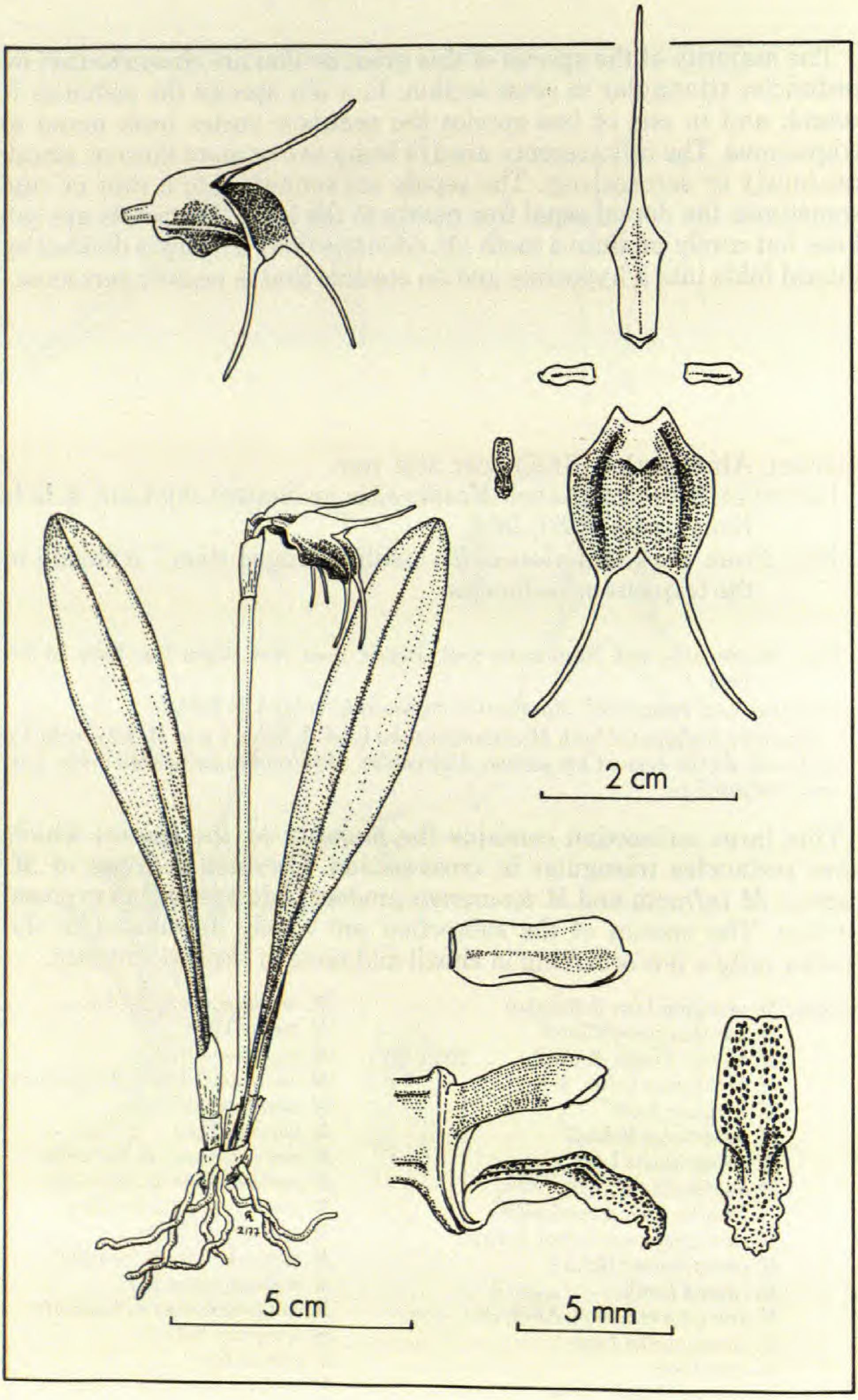

Plate 21. *Masdevallia bicolor* Poepp. & Endl.

Subsect. **Polyanthae** (Rchb.f.) Veitch, Man. Orchid. Pl. 5:18, 1889.
Type: *Masdevallia polyantha* Lind. ex Lindl., Orch. Lind. 6, 1846. (*M. schlimii* Lind. ex Lindl., Orch. Lind. 5, 1846).

This small subsection contains those species with peduncles round in cross-section.

Species: *M. curtipes* Barb. Rodr.
M. discoidea Luer & Würstle
M. lata Rchb.f.
M. menatoi Luer & Vásquez
M. oreas Luer & Vásquez
M. schlimii Lindl. ..... Plate 22.
M. thienii Dodson

Masdevallia subgen. **Masdevallia** sect. **Racemosae** Woolw., The Genus *Masdevallia* sect. IX, 1896.
Type: *Masdevallia racemosa* Lindl., Ann. Mag. Nat. Hist. 15:256, 1845.
Ety.: From the Latin *racemosus*, "racemose," referring to the inflorescence.

This section, consisting of a single beautiful Colombian species, is set apart from all other subgeneric taxa of the genus by the habit: a long, creeping or ascending rhizome and a loose inflorescence that produces several flowers simultaneously and successively. Although the flowers "look like" they belong to *M.* sect. *Masdevallia*, the callous petals without a tooth, and the thick ligulate lip suggest a closer relationship with *M.* sect. *Coriaceae*.

Species: M. racemosa Lindl. ..... Plate 23.

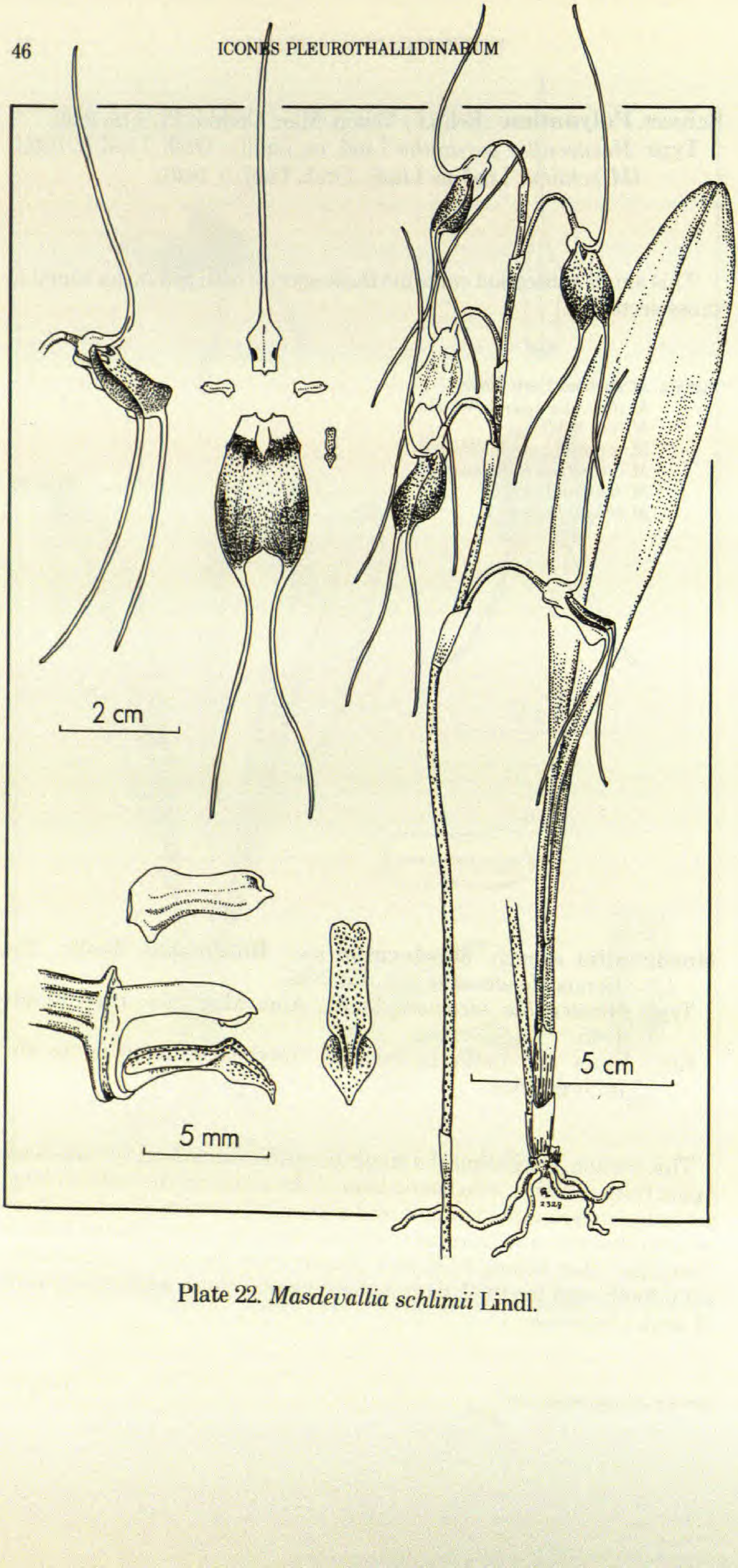

Plate 22. *Masdevallia schlimii* Lindl.

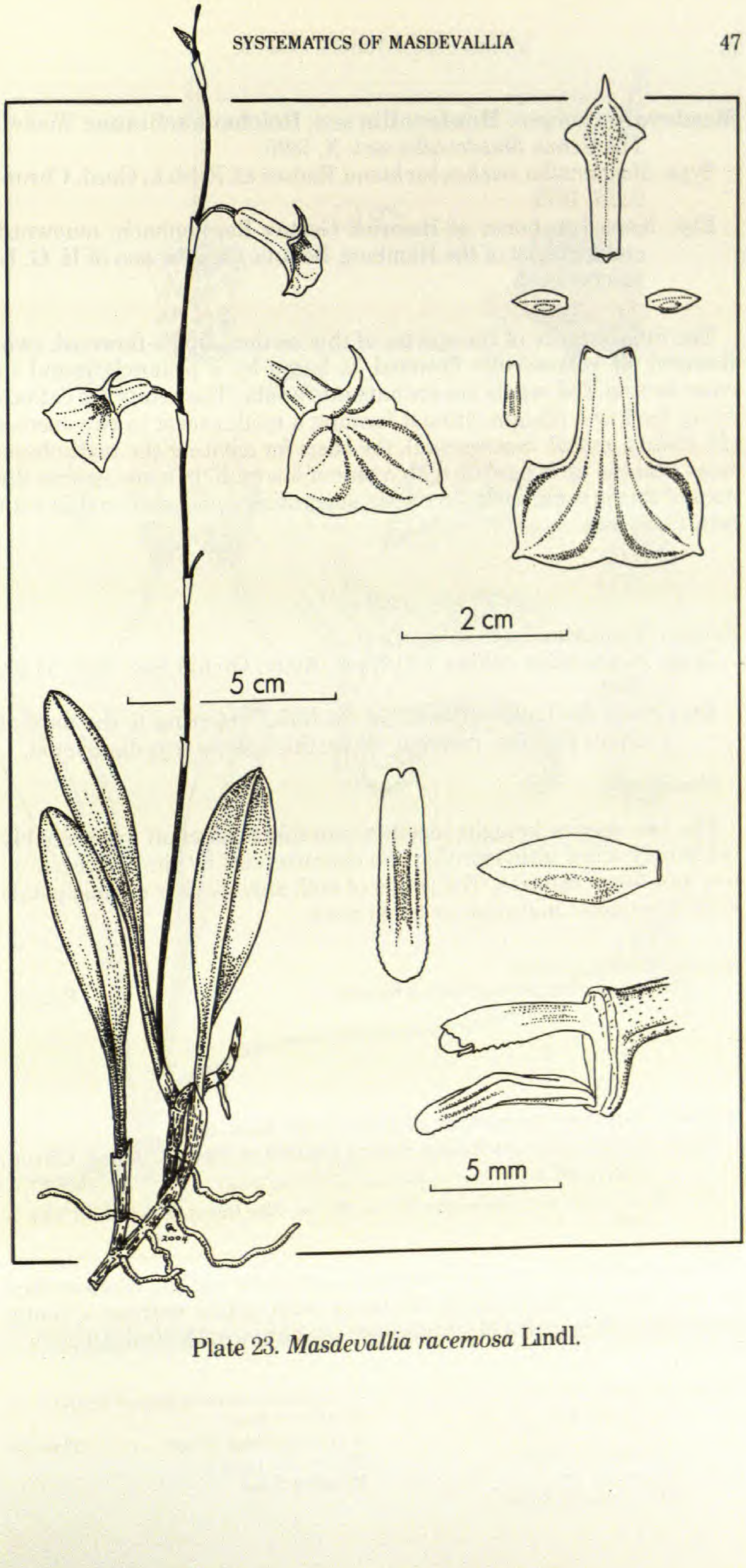

Plate 23. *Masdevallia racemosa* Lindl.

Masdevallia subgen. **Masdevallia** sect. **Reichenbachianae** Woolw., The Genus *Masdevallia* sect. X, 1896

Type: *Masdevallia reichenbachiana* Endres ex Rchb.f., Gard. Chron. 2:257, 1875.

Ety.: Named in honor of Heinrich Gustav Reichenbach, renowned orchidologist of the Hamburg Botanic Garden, son of H. G. L. Reichenbach.

The inflorescence of the species of this section, single-flowered, two-flowered, or successively flowered, is borne by a peduncle round in cross-section. The sepals are connate into a tube. The petals are callous along the lower margin without forming a tooth except in two species (*M. collina* and *M. macrogenia*), the basis for creating the two subsections, and the lip is ligulate with a pair of low calli. In some species the apex of the lip is minutely verrucose, suggesting some relationship with sect. *Coriaceae*.

Subsect. **Dentatae** Luer, subsect nov.

Type: *Masdevallia collina* L.O.Wms., Amer. Orchid Soc. Bull. 11:93, 1942.

Ety.: From the Latin *collinus*, "of the hills," referring to the habitat above El Valle, Panama, where this species was discovered.

Petala dentata.

The two species brought together into this subsection are probably not closely allied although they are characterized by similar vegetative and floral features. The petals of both species bear callous petals with prominent, marginal or basal teeth.

Species: *M. collina* L.O.Wms
M. macrogenia (Arango) Luer & Escobar . . . . . Plate 24.

Subsect. **Reichenbachianae** (Woolw.) Luer, stat. nov.

Type: *Masdevallia reichenbachiana* Endres ex Rchb.f., Gard. Chron. 2:257, 1875.

Bas.: *Masdevallia* sect. *Reichenbachianae* Woolw., The Genus *Masdevallia* sect. X, 1896.

This subsection contains all those species of the section, whether they be one-, two- or successively flowered, with petals without a tooth. Except for one species (*M. garciae*), all are native to Central America.

Species: *M. calura* Rchb.f.
M. chasei Luer
M. demissa Rchb.f.
M. fulvescens Rolfe
M. garciae Luer
M. marginella Rchb.f.
M. reichenbachiana Endres ex Rchb.f.
M. rolfeana Krzl.
M. schroederiana Veitch . . . . . Plate 25.
M. striatella Rchb.f.
M. walteri Luer

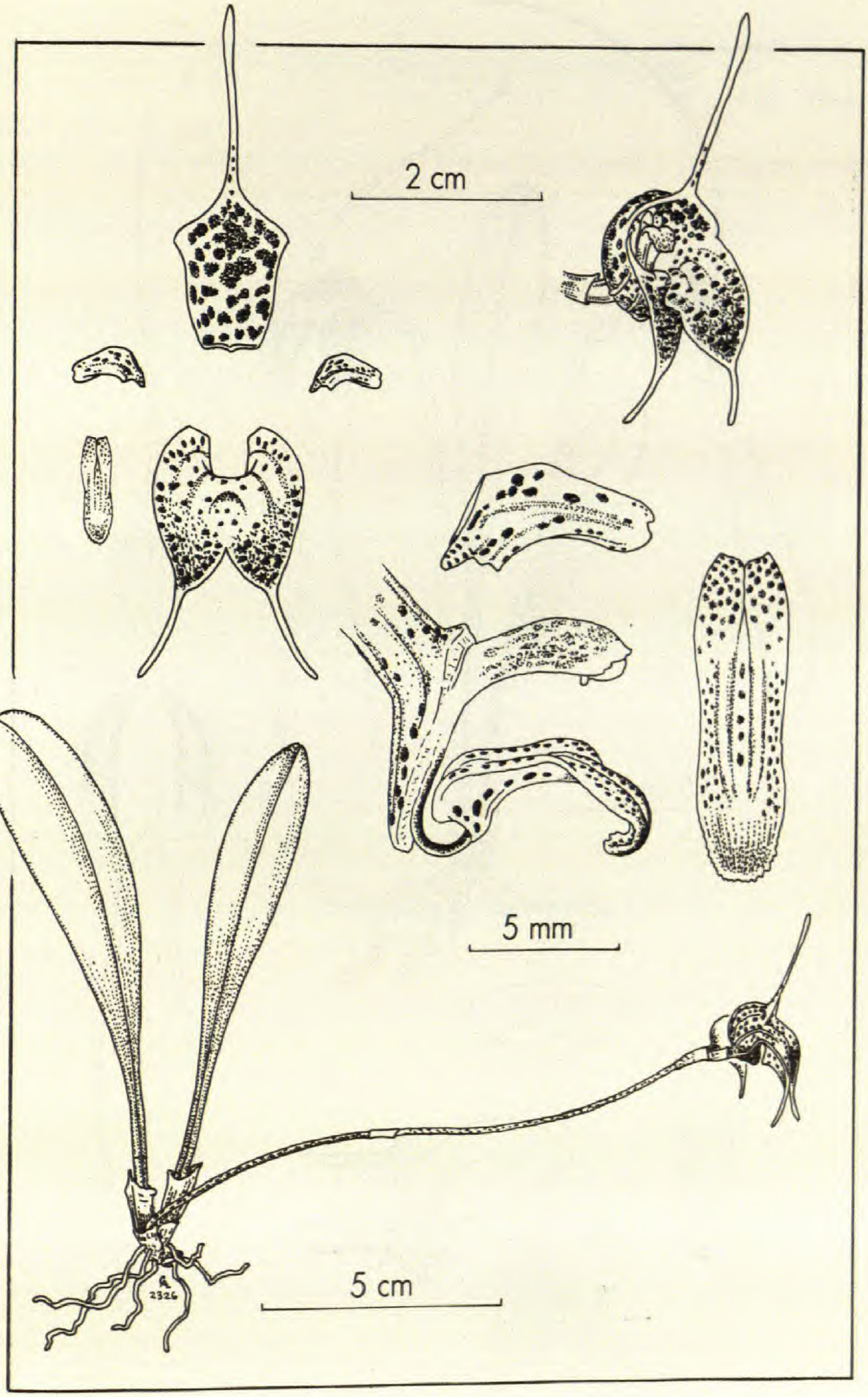

Plate 24. *Masdevallia macrogenia* (Arango) Luer & Escobar

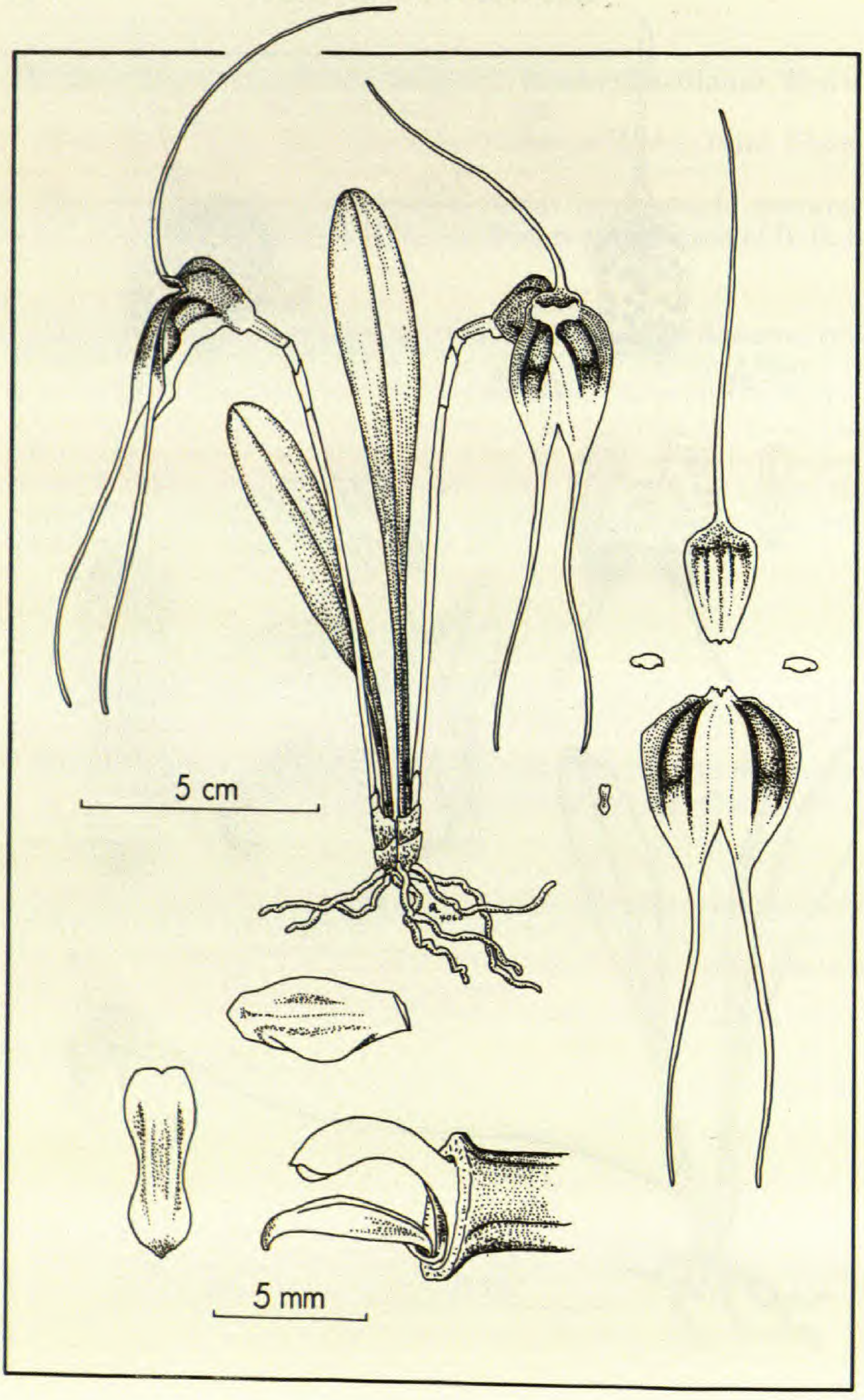

Plate 25. *Masdevallia schroederiana* Veitch

Masdevallia subgen. **Meleagris** Luer, nom. nov.
Type: *Masdevallia meleagris* Lindl., Ann. Mag. Nat. Hist. ser. 1, 15:257, 1845.
Ety.: From the Latin *meleagris*, "a peacock," in allusion to the colorfully banded flowers.

Syn.: *Rodrigoa* Braas, Die Orchidee 30:203, 1979.
Type: *Masdevallia meleagris* Lindl.
Ety.: Named for Don Rodrigo Escobar of Medellín, Colombia.

This subgenus of seven closely allied species, found in the western and central cordilleras of Colombia and the mountains of Ecuador, is characterized by a successively flowered raceme of attractive, colorful flowers with widely spreading sepals. The ovaries of most species are crested, and the sepals are free nearly to their bases, similar to many species in *M.* subgen. *Amanda*. The petals are cartilaginous with a callus along the labellar margin. The thick lip is variously shaped from oblong to ovate. The lip is hinged beneath to the lower margin of the extension of the column-foot, as is also sometimes the case in sect. *Amandae*. The column is typical for *Masdevallia*.

Species: *M. alexandri* Luer
M. anisomorpha Garay
M. heteroptera Rchb.f.
M. hortensis Luer & Escobar
M. meleagris Lindl. ..... Plate 26.
M. parvula Schltr.
M. segurae Luer & Escobar

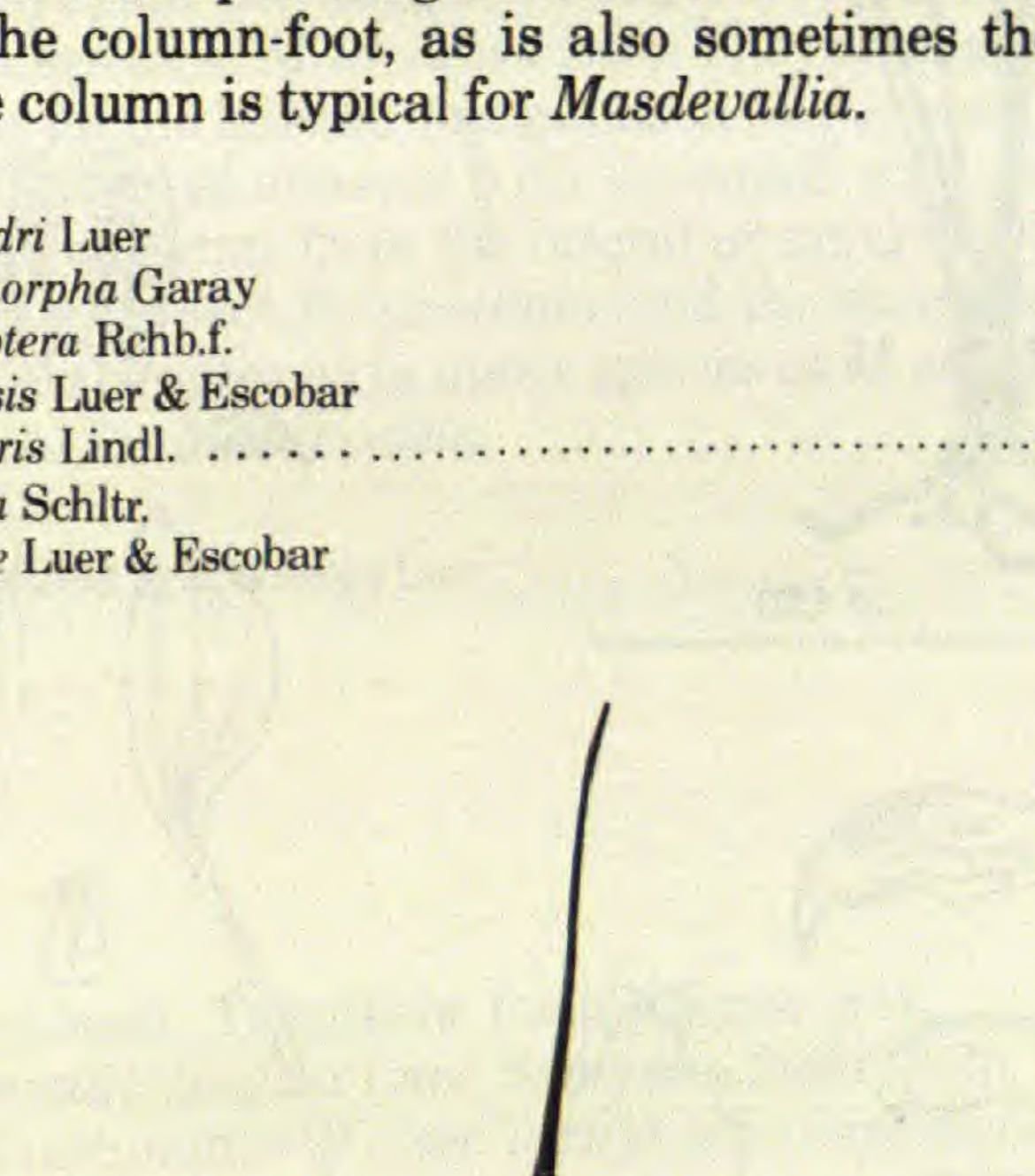

Figure 3. *Masdevallia heteroptera* Rchb. f.

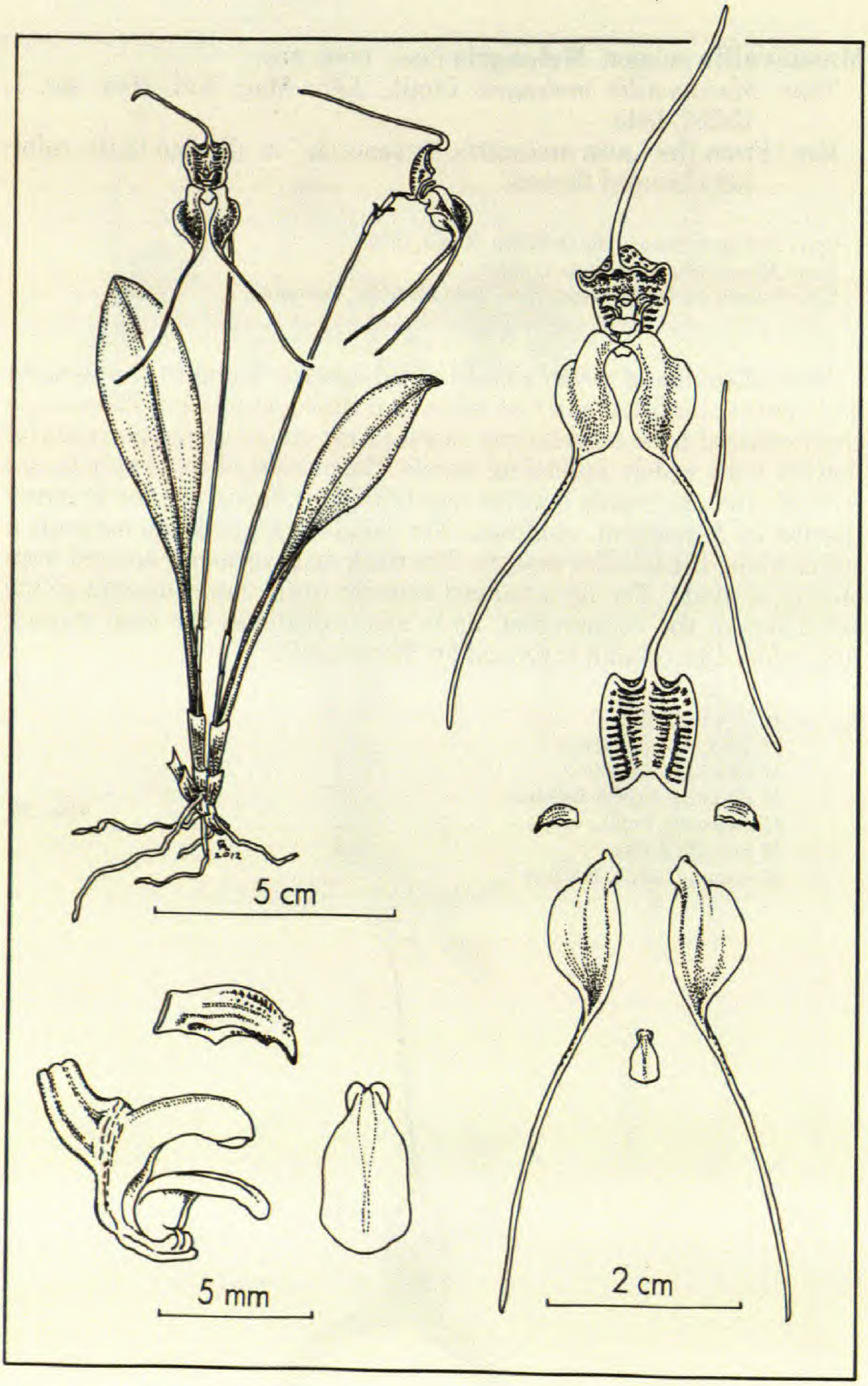

Plate 26. *Masdevallia meleagris* Lindl.

Masevallia subgen. **Pelecaniceps** Luer, nom. nov.
Type: *Masdevallia pelecaniceps* Luer, Selbyana 3:22, 1976.
Ety.: From the Latin *pelecaniceps*, "pelican-headed," in allusion to the the appearance of the flower.

Syn.: *Luerella* Braas, Die Orchidee 30:108. 1979.
Type: *Masdevallia pelecaniceps* Luer
Ety.: Named for C. Luer who described this species.

This species is characterized by the single-flowered peduncle, thick, rugose sepals without tails, callous petals subcarinate externally, and a lip with acute, erect lateral lobes and an excavate base.

Treated here as a monotypic subgenus, *Masdevallia pelecaniceps* has no close relatives within *Masdevallia,* yet the morphological features indicate that this unusual Panamanian species belongs here.

The single-flowered peduncle is borne from an annulus high on the ramicaul as it is in *M. macropus* Lehm. & Krzl. and *M. macrura* Rchb.f. The boxlike flower is rigid and semiclosed as in *M. navicularis* Garay & Dunsterv. The sepals are rugose within as in *M. trochilus* Lind. & Andre, and tailless as in *M. mentosa* Luer. The cartilaginous petals lack a distinct callus on the labellar margin as in *M. foetens* Luer & Escobar. The lip is perhaps most unusual with the small, erect, uncinate lateral lobes (varying somewhat from the lateral or marginal folds typical in subgen. *Masdevallia* sect.*Polyanthae*), and the excavate base between incurved marginal angles as in many species of *M.* sect. *Coriaceae*. The column is typical for *Masdevallia*.

One species: *Masevallia pelecaniceps* Luer. . . . . Plate 27.

Masdevallia subgen. **Teagueia** Luer, subgen. nov.
Type: *Masdevallia teaguei* Luer, Selbyana 2:381, 1978.
Ety.: Named in honor of Walter Teague who first discovered the type species.

Pedunculus in transectione rotundus. Racemus congestus floribus successivis. Petala supra basim dentifera. Labellum crassum in hypchilium fissum bilamellatum et in epichilium tricarinatum divisum. Pes columnae crassissimus.

The flowers of this unique Ecuadorian species, treated here as monotypic subgenus, are produced successively in a congested raceme borne by a peduncle round in cross-section. The sepals are connate into a gibbous cup. The callus of the thick petals is produced into a tooth above the base. The thick lip is divided into a cleft hypochile forming a pair of prostrate lamellae, and a decurved, tricarinate epichile. The base of the lip is thick and hinged by a strap to the under surface of a very thick extension of the column-foot. The column is typical for *Masdevallia*.

One species: *Masedevallia teaguei* Luer . . . . . Plate 28.

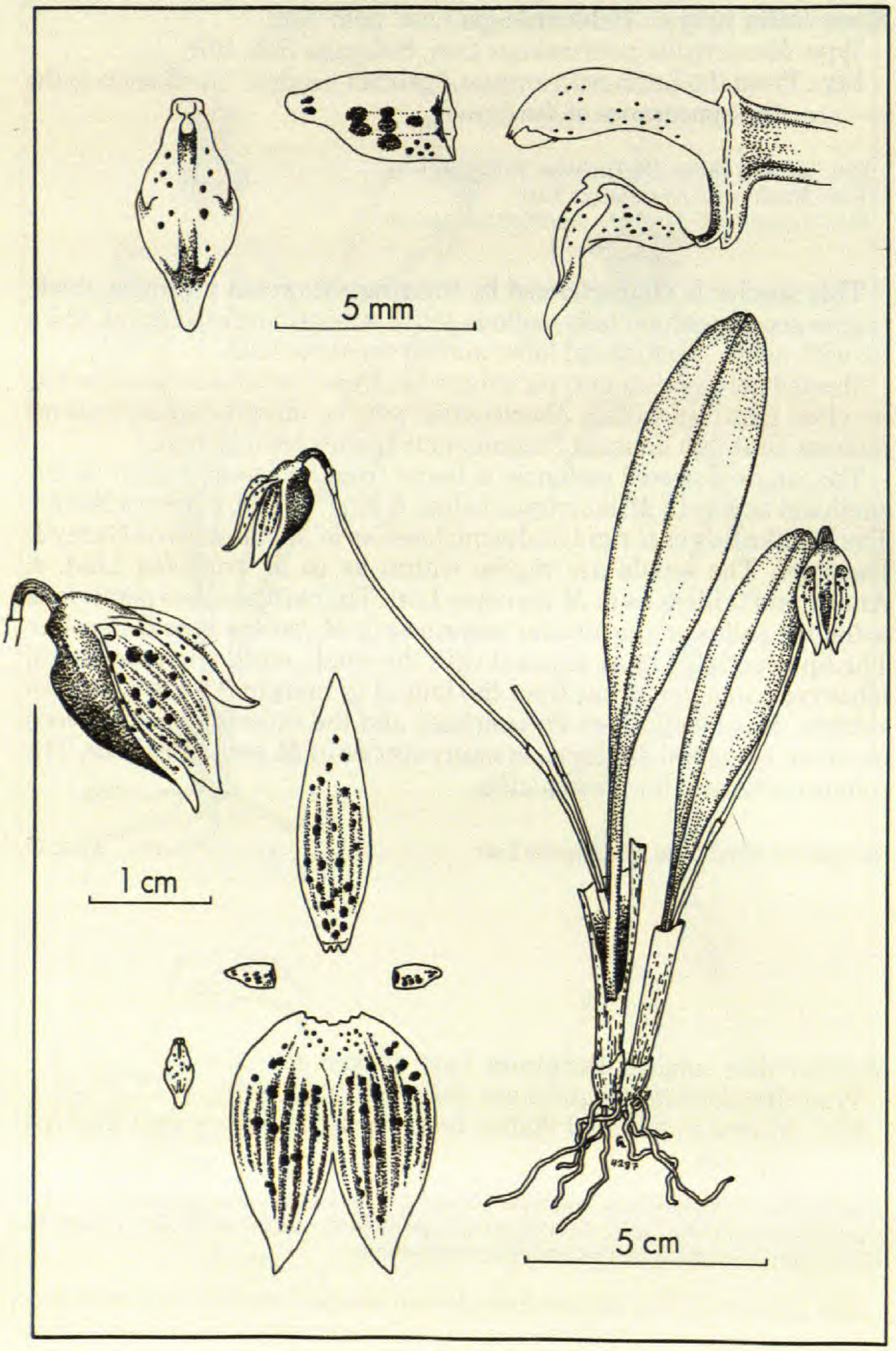

Plate 27. *Masdevallia pelecaniceps* Luer

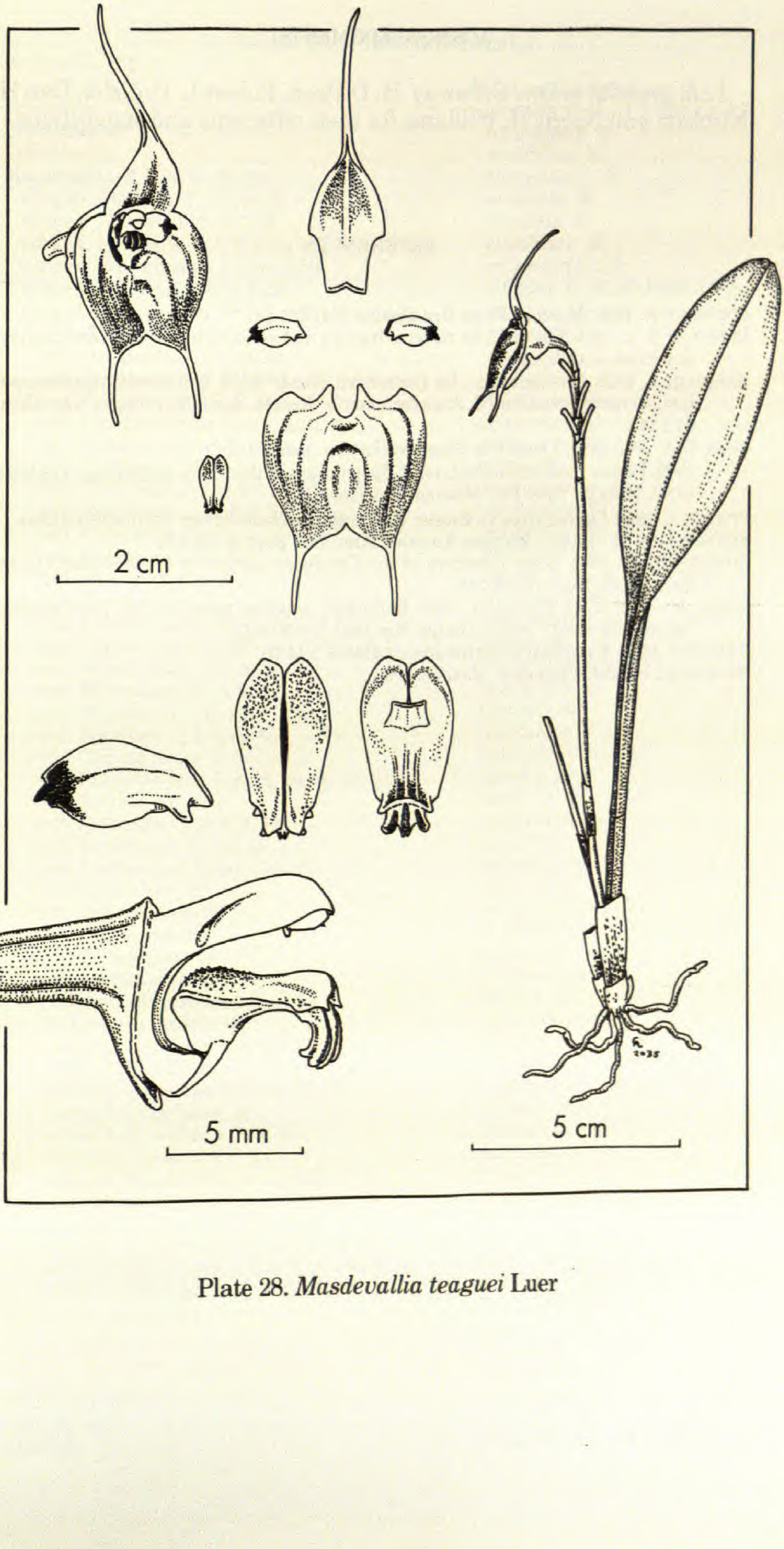

Plate 28. *Masdevallia teaguei* Luer

ACKNOWLEDGMENTS

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*Neither fresh nor pickled material examined.

SYNONYMOUS EPITHETS

The following list of epithets is offered to identify species that have been associated with other names. It excludes those of horticultural or hybrid origin and those which have been transferred to other genera. The identity of all is not certain, but the best that can be offered at the present time.

Masdevallia acrochordonia Rchb. f. = trochilus
aequatorialis Lehm. & Krzl. = pardina
aequiloba Regel = civilis
alismifolia Krzl. = laevis
antioquiensis Lehm. & Krzl. = molossus
anura Krzl. = molossoides
aops Luer = klabochorum
aristata Barb. Rodr. = infracta
aspera Rchb. f. ex Krzl. = paivaeana
asperrima Krzl. = melanoxantha
atroviolacea Krzl. = sororcula?
aurantiaca Lindl. = infracta
aureodactyla Luer = pachyura
bathyschista Schltr. = heteroptera?
biflora Morren = bicolor
biflora Regel = caloptera
bilabiata (Krzl.) Garay = platyglossa
borucana P. H. Allen = lata
braasii Mohr = teaguei
bruchmuelleri Morren = coriacea
buchtienii Schltr. = scandens
burfordiensis O'Brien = angulata
calopterocarpa Rchb. f. = amanda
calyptrata Krzl. = corniculata
candida Kl. & Karst. = tovarensis
casta Krzl. = tubulosa
cayennensis Rchb. f. = cuprea
chiguindensis Krzl. = leucantha
chloracra Rchb. f. = striatella
Masdevallia chlorotica Krzl. = affinis
chrysochaete Lehm. & Krzl. = affinis
chrysoneura Lehm. & Krzl. = affinis
confusa Krzl. = affinis
copiosa Krzl. = hians
costaricensis Rolfe = marginella
cryptocopis Rchb. f. ex. Krzl. = picturata
cucutillensis Krzl. = heiroglyphica?
cyathogastra Schltr. = nifiifica
densiflora Schltr. = huebschiana?
deorsum Rolfe = caesia
dermatantha Krzl. = campyloglossa
diantha Schltr. = chontalensis
dispar Luer = auropurpurea
diversifolia Krzl. = parvula
ecaudata Schltr. = tubuliflora
echinocarpa Schltr. = erinacea
ellipes Rchb. f. = peristeria
endotrachys Krzl. = coriacea subsp. bonplandii
ephippium Rchb. f, = trochilus
exaltata Luer = deformis
exigua Ames & Schweinf. = pygmaea
exilipes Schltr. = pumila
fasciata Rchb. f. = heteroptera
fertilis Krzl. = campyloglossa
filamentosa Krzl. = pumila
fissa Krzl. = heteroptera
flaccida Krzl. = uncifera
flammea Braas = venusta

Masdevallia forgetiana Krzl. = infracta?
frontinoensis Krzl. = herradurae
funebris Endres ex Krzl. = reichenbachiana
galeottiana Rich. & Gal. = floribunda
gargantua Rchb. f. = elephanticeps
gnoma Sweet = bangii
gomeziana Lehm. & Krzl. = affinis
grandiflora C. Schweinf. = pumila
gustavii Rchb. f. = amanda
haematosticta Rchb. f. = peristeria
hajekii Luer = chaparensis
harryana Rchb. f. = coccinea
herzogii Schltr. = bicolor
heteropetala Rchb. f. = campyloglossa
hoppii Schltr. = pachyantha
horrida Teuscher & Garay = erinacea
humilus Luer = zahlbruckneri
inflata Rchb. f. = corniculata
jubar Luer & Malo = tridens
kalbreyeri Rchb. f. ex Krzl. = urceolaris
lawrencei Krzl. = guttulata
lindeniana Rich. & Gal. = floribunda
lindenii André = coccinea
longicaudata Lem. = infracta
maculigera Schltr. = affinis
margaretae Luer = carruthersiana
maxillariiformis Lehm. & Krzl. = strumifera
metallica Lehm. & Krzl. = caesia
militaris Rchb. f. = coccinea
morenoi Luer = schizopetala
moyobambae Kgr. = weberbaueri
muriculata Krzl. = pygmaea
myriostigma Morren = floribunda
nutans Lehm. & Krzl. = anachaeta
ocanensis Krzl. = picturata
odontochila Schltr. = cupularis
oligantha Schltr. = amanda
olivacea Krzl. = angulifera
ortalis Luer = rodolfoi
ortgiesiana Rolfe = campyloglossa
pachygyne Krzl. = obscure identity
paisbambae Lehm. & Krzl. = klabochorum
pallida (Woolw.) Luer = xanthina
Masdevallia palmensis Krzl. = heteroptera
pantherina Lehm. & Krzl. = affinis
pastensis Krzl. = uncifera
peruviana Rolfe = bicolor
petiolaris Schltr. = affinis
polyantha Lindl. = schlimii
porcelliceps Rchb. f. = macroglossa
purpurina Schltr. = amabilis
rauhii Braas & Sengh. = mezae
reflexa Misas = misasii
reflexa Schltr. = cupularis
remotiflora Krzl. = amanda
restrepioidea Krzl. = heteroptera
rhopalura Schltr. = molossoides
rodrigueziana Mansf. = wendlandiana?
sanctae-fidei Krzl. = auropurpurea
sarcophylla Krzl. = campyloglossa?
schizantha Krzl. = obscure name
schmidtchenii Krzl. = molossus
shuttleworthii Rchb. f. = caudata
sphenopetala Krzl. = corazonica
stenantha Lehm. & Krzl. = tubulosa
stercorea Kgr. = rigens
subumbellata Krzl. = bicolor
sulphurea Lehm. & Krzl. = coriacea subsp. bonplandii
superflua Krzl. = striatella
surinamensis Focke = minuta
tenuicaudata Schltr. = nidifica
tenuipes Schltr. = tubulosa?
tridentata Lindl. = infracta
trinemoides Krzl. = heteroptera
trionyx Krzl. = falcago
trioon Sweet = bangii
tuerckheimii Ames = floribunda
ulei Schltr. = yauaperyensis?
urostachya Rchb. f. = sceptrum
ventricosa Schltr. = nidifica
vulcanica Lehm. & Krzl. = anachaeta
xanthodactyla Rchb. f. = melanopus
xanthura Schltr. = bicolor
xerophylla Lehm. & Krzl. = pteroglossa
xiphium Rchb. f. ex Rchb. f. = corderoana

EPITHETS PUBLISHED IN *MASDEVALLIA* REFERABLE TO *BARBOSELLA*

Masdevallia anaristella Krzl.
longiflora Krzl.

EPITHETS PUBLISHED IN *MASDEVALLIA* REFERABLE TO *DRACULA*

Masdevallia andreettae Luer
astuta Rchb. f.
backhousiana Rchb. f.
bella Rchb. f.
benedictii Rchb. f.
burbidgeana Rolfe
callifera Schltr.
carderi Rchb. f.
carderiopsis Lehm. & Krzl.
chestertonii Rchb. f.
chimaera Rchb. f.
deltoidea Luer
dodsonii Luer
erythrochaete Rchb. f.
felix Luer
fuliginosa Luer
gaskelliana Rchb. f.
gigas Luer & Andreetta
gorgo Rchb. f. ex Krzl.
houtteana Rchb. f.
inaequalis Rchb. f.
iricolor Rchb. f. ex Krzl.
janetiae Luer
johannis Schltr.
lactea Krzl.
lotax Luer
lowii Rolfe
macrochila Regel
madellinensis Krzl.
microglochin Rchb. f.
Masdevallia mopsus Lehm. & Krzl.
mosquerae Lehm. & Krzl.
nycterina Rchb. f.
platycrater Rchb. f.
polyphemus Luer
psittacina Rchb. f.
psyche Luer & Andreetta
pusilla Rolfe
quilichaoensis Lehm. & Krzl.
radiosa Rchb. f.
roezlii Rchb. f.
senilis Rchb. f.
severa Rchb. f.
simia Luer
sodiroi Schltr.
spectrum Rchb. f.
tarantula Luer
triceratops Luer
trichroma Schltr.
tricolor Rchb. f., 1882
trinema Rchb. f.
troglodytes E. Morr.
tubeana Rchb. f.
vampira Luer
velutina Rchb. f.
venosa Rolfe
vespertilio Rchb. f.
wallisii Rchb. f.
winneana Rchb. f.
woolwardiae Lehm. & Krzl.

EPITHETS PUBLISHED IN *MASDEVALLIA* REFERABLE TO *DRYADELLA*

Masdevallia albicans Luer
auriculigera Rchb. f.
aviceps Rchb. f.
bradei Schltr.
carinata Cogn.
crenulata Pabst
dolichopoda Luer
edwallii Cogn.
elata Luer
espirito-sanctensis Pabst
gomes-ferreirae Pabst
guatemalensis Schltr.
kautskyi Pabst
lilliputiana Cogn.
linearifolia Ames
meiracyllium Rchb. f.
Masdevallia melloi Pabst
obrieniana Rolfe
osmariniana Braga
paranensis Schltr.
paulensis Barb. Rodr.
perpusilla Krzl.
popayanensis Lehm. & Krzl.
pusiola Rchb. f.
riograndensis hort.
sessilis Barb. Rodr.
simula Rchb. f.
simulatrix Krzl.
summersii L. O. Wms.
susanae Pabst
zebrina Porsch

EPITHETS PUBLISHED IN *MASDEVALLIA* REFERABLE TO *PLEUROTHALLIS*

Masdevallia aperta Krzl.
carpophora Krzl.
culex hort.
fimbriata Ames & Schweinf.
jalapensis Krzl.
platyrachis Rolfe
tricarinata Lehm. & Krzl.
triquetra Scheidw.

EPITHETS PUBLISHED IN *MASDEVALLIA* REFERABLE TO *PORROGLOSSUM*

Masdevallia amethystina Rchb. f.
colombiana Schltr.
echidna Rchb. f.
eduardii Rchb. f.
mordax Rchb. f.
muscosa Rchb. f.
xipheres Rchb. f.

EPITHETS PUBLISHED IN *MASDEVALLIA* REFERABLE TO *SCAPHOSEPALUM*

Masdevallia anchorifera Rchb.f.
brevis Rchb. f.
gibberosa Rchb. f.
lima Lehm. & Krzl.
macrodactyla Rchb. f.
ochthodes Rchb. f.
pulvinaris Rchb. f.
punctata Rolfe
swertiaefolia Rchb. f.
verrucosa Rchb. f.

EPITHETS PUBLISHED IN *MASDEVALLIA* REFERABLE TO *TRISETELLA*

Masdevallia allenii L. O. Wms.
butcheri Luer
didyma Luer
dressleri Luer
gemmata Rchb. f.
huebneri Schltr.
pantex Luer
tenuissima C. Schweinf.
triaristella Rchb. f.
trichaete Rchb. f.
tridactylites Rchb. f.
triglochin Rchb. f.
triseta Rchb. f. ex. Krzl.
vittata Luer

EPITHETS PUBLISHED IN *MASDEVALLIA* REFERABLE TO *ZOOTROPHION*

Masdevallia argus Rchb. f. ex Krzl.
dayana Rchb. f.
fenestrata Lindl.
gracilenta Rchb. f.
hypodiscus Rchb. f.